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ComputerWeekly

Thursday, March 24, 1983

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'Software firms are failing users'

by John Kavanagh

SOFTWARE firms are more concerned with short-term profit than customers' long-term needs. And users are being denied the benefits of new technologies and methods.

That claim made by Cincom president Tom Nies during a flying visit to the UK last week has sparked off quick replies from leading software firms mentioned by name in his damning indictment of the industry.

Nies, head of one of the world's biggest independent systems software suppliers, said short-term investment policies were "a scandal". Through the suppliers' self-interest users' demands for productivity tools were not being met.

Too many suppliers still used Cobol, developed in 1959 and now a block to progress in software development, he said. He pointed to a need for application languages such as Cincom's Mantis.

Nies partly blamed IBM for failing to take a lead in software. New software technology from IBM would make other suppliers act, Nies said, but IBM lagged badly in software products.

He singled out applications specialist Management Science America and database firm Cullinane as firms which were buying other companies to improve their balance sheets.

But MSA's head of international operations, Michael Hunt, dismissed Nies' claims. "We put $22.9 million into research and development last year," he said. "That was 22% of our revenues. One of our biggest operations is customer field support. This sort of investment is the only way to improve our profit and loss position. We're growing at over 40% a year. Cincom's growth is less than 30%.

"As for Cobol, it is the standard language for users. A new standard is more likely to come from IBM than from Cincom with Mantis."

Paul Ingram, managing director of Systems Resources, which sells the UFO rival to Mantis in the UK, agreed. "When companies like MSA started writing packages Cobol was one of the few standard languages," he said. "MSA packages have been maturing for years; that's why they're so good. If you're selling to IBM customers as MSA is, you write in Cobol or PL/I because that gives you a broader market. But it doesn't really matter if the package is in Cobol as long as it does the job and integrates with IBM projects.

"That is why UFO scores heavily, because it can be built into existing Cobol systems even though it's a fourth-generation language."

NIES . . . Short-term investment policies "a scandal".

Cullinane's UK managing director, Vic Morris, said suppliers had to be closely in tune with users' needs to be successful.

"Looking at application generators can be somewhat shortsighted," he added. "What users want is products which can all integrate with each other."

IBM users lept to the industry leader's side in the face of Nies' comments. "IBM software is getting a lot better," said users association officer George Goute. "In our latest software survey IBM products are no longer bottom of the league. You would expect them to get low marks because it is being at a very broad market."

■ Software Analysis: page 11.

DPMs unready for privacy Bill-survey

by John Riley

THE MAJORITY of DP managers in top computer companies do not understand the Data Protection Bill, and are not prepared for it.

But most of them think that the legislation is vital.

Some 200 DP managers replied to a survey conducted by the Department of Computer Science at Brunel University. About 60% either had no knowledge of the subject, or just an acquaintance with it. About 50% had not read the various White Papers, or committee reports on data protection.

Jim Wood, lecturer in systems analysis at Brunel, commented: "There has been a lot of discussion about the Data Protection Bill, with most of the opinions being expressed by users. We decided to ask the people who would actually implement it."

Paradoxically, although 60% had little knowledge of data privacy, some 80% considered it urgent that the government introduces such legislation into the UK.

The companies sampled were all in the data processing industry, and revealed that their personal records were split between computerised and manual systems in 88% of the cases. Only 6% had their personal records fully automated.

There was a strong feeling among DP managers (80%) that the legislation should include manual record keeping systems as well as automated systems, and 76% agreed that people should be able to check their own records. However, over half of those companies expecting to be affected by the legislation have not studied the possible impact on changes to software, installation of security systems, staff training, and so on.

Wood thinks that the cost of implementation will be high. "If the Bill is implemented correctly, I can see it costing a lot of money and creating a lot of extra work. A significant amount of work will be diverted in monitoring and controlling for the new legislation."

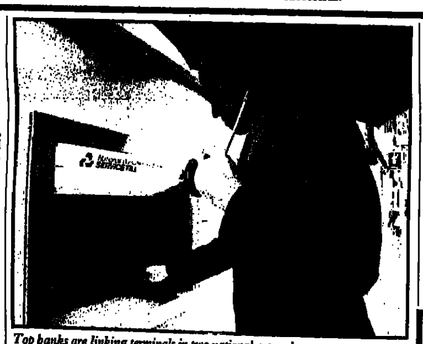
* Survey of Opinions on Privacy in the Computing Industry, Hamish Chawla, Department of Computer Science, Brunel University, free of charge.

LINE NOISE

THERE could be more to US computing giant Control Data's interest in the comparatively tiny UK firms Arbat and Systime than meets the eye. Control Data said it wanted to expand in the banking market and get new hardware on which to sell its Plato computer-based training system. But until very recently – before the Arbat and Systime investments were announced – the US firm was on the Arab countries' blacklist of firms they will not trade with, probably because of its close ties with the Israeli company Elbit. And guess what: Arbat and Systime have well established operations in the potentially money-spinning Middle East market.

IN the meantime the US giant is set to join the tiny Winchester race. A 3½-inch drive, much the same size as the recent Rodime launch, is ready to be shown at this year's National Computer Conference in May. It is chirpily known as the Cricket – presumably to indicate its descent from the eight-inch Lark and 5½-inch Wren. Will the Flea be the next in line?

THE launch of Philips' token passing ring local area network has been delayed by several months from the planned date of the end of this month. This means it will miss the Hanover Fair in April and is likely to get its first public airing at Telecom 83 in Geneva in the autumn. Token passing rings are the subject of standards work in the European Computer Manufacturers' Association and the US Institute of Electrical and Electronic Engineers that is expected to result in draft proposals this summer. A token ring is also under development at the US company Amdax, which was recently acquired by the Ethernet specialist Ungermann-Bass.



Top banks are linking terminals in two national networks.

Top banks plan control of the cashless society

by George Black and Andrew Thomas

FIVE major banks are to make a push for the cashless society and take control of the proposed links of shop tills to banks. And top banks are to combine to link their cash terminals in two separate national networks.

A consortium of NatWest, Barclays, Lloyds, Midlands and Williams & Glyn's wants to wrest control of the project from building societies and smaller finance houses, according to a report now circulating within the UK's top banks.

A spokesman for the Committee of London Clearing Bankers, which has to decide the issue this summer, said: "Retailers have been on at us to get the thing under way and they can't expect us to do it purely for everyone else's benefit. If the building societies are so keen to establish such a system, then let them do it – but they haven't made any move so far."

The five aim to do away with both cheques and the traditional pieces of plastic, eventually replacing them with microprocessor-based cards which handle all transactions. First step is the proposed shop-to-computer link which could be launched in 1986.

The ones to gain most, the report argues, will be the system's owners, who could get their investment back within three years through reduced operating costs.

Systems house Logica last month completed its study of the plan for online transaction checking. Now the CLCB is looking at how best to bring in electronic funds transfer at point of sale (EFTPOS). The proposed consortium would cut across several other computerisation developments which have been recently floated.

Phase one has been estimated by the report to cost about £37 million. And it could lead to more than 100,000 terminals in shops being linked to central computers by the mid-1990s.

Meanwhile five UK banks are planning a shared cash dispenser network to provide 2,500 through-the-wall terminals serving 15 million customers. The scheme, involving the Bank of Scotland, Barclays, Lloyds, the Royal Bank of Scotland and Williams & Glyn's, will involve a dedicated hardwired network linking the banks' own mainframes.

DG takes aim at Wang

MINI manufacturer Data General hopes to snatch Wang users by a new twist to its office automation strategy.

A new software package announced by Data General last week enables Wang word processor users to plug into Data General's Comprehensive Electronic Office.

"This means that we can now go out and approach customers who have invested in Wang word processing," said Alex Monro, Data General's marketing communications manager.

Compatibility is achieved by software which translates the coding codes of documents produced on Wang word processors into a format suitable for Data General's Comprehensive Electronic Office available on its MV series of 32-bit minicomputers.

The initial licence for the document exchange package software is £3,905, and subsequent licences for attaching other Wang equipment to other MVs in the same network are likely to cost £1,95.

This is the latest development in Data General's efforts to gain compatibility with other manufacturers.

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No training, no growth

by John Kavanagh

CUTS in government support for university degrees in technology subjects could pose critical problems as soon as the economy starts to recover.

That is the conclusion of a damning report on the supply of graduates by the independent Institute of Manpower Studies. The report puts new pressure on a government already being berated by computer company heads for the fall in university places.

But other industry leaders have seized on the report to call for more training of computing staff by employers. The government's Manpower Services Commission and the Institute of Data Processing Management say installations have cut right back on training in the slump and are only interested in experienced people. When recovery comes there will be a serious shortage of trained staff, they say.

The Institute of Manpower Studies points to a 5% fall in the number of electrical and electronic engineering graduates who will leave UK universities between 1984 and 1985. Even the number of mathematics and computer science graduates, which will show the biggest increase – 48% – between 1978 and 1985, will fall back after 1984, says the report.

"The continuing decline in the numbers of engineering and technology graduates in 1985 may well coincide with a significant increase in demand by employers should the anticipated economic revival occur," says the report.

Richard Pearson, head of labour market studies at the institute, put it more bluntly: "I wouldn't be surprised if demand doubled very quickly. The market could go quite berserk. Given the need to support the new technologies we should be expanding not contracting our output of trained engineering and technology graduates."

The report comes after damning outbursts by industry leaders, including ICL managing director Robb Wilmot and Hewlett-Packard's UK managing director, David Baldwin, on the government's university spending policy.

And the Department of Industry says it "deplores" the report. "We want to see the development of robotics and information technology as widely as possible in industry," said a spokesman. "The future of our industry depends on it. If there is a shortage of young blood the long-term effect could be serious."

Demand for graduates is likely to be considerable. Last year ICL took on over 300 and it is "recruiting heavily" this year, although it wants people from any discipline.

But it is user installations and industry which should be doing much of the training of computing staff, according to the Institute of Data Processing Management.

"We don't need computer science graduates for commercial computing," said secretary-general Ted Cluff. "They would get bored after six months and leave. What we need are people at the bottom end. If employers do not take on trainees and there is an upturn there will not be enough people. Employers are now chasing people with at least two years' experience."

Graduate Supply: Projections to 1985. 29pp. £4. Institute of Manpower Studies, Mantell Building, Sussex University, Falmer, Brighton BN1 9RP.

PEARSON . . . "The market would go berserk."

Sperry wins big US navy order

SPERRY Univac has won a $324 million contract to supply computer systems to the US Navy Sea Systems Command – and it could lead to further orders worth over $500 by 1988. The announcement comes two months after Sperry's $476 million deal to equip the US Air Force, including 20,000 peripherals.

The mainframe maker is to double production capacity at the communications and terminals product division at Salt Lake City at a cost of $43 millions.

Cork boards

CALIFORNIAN chip maker Western Digital is to open a circuit board assembly and test plant in Cork, Ireland. The initial investment in this first Western Digital plant in Europe will be about $2 million, and finished goods should be shipped out of Cork from September this year. Highly automated equipment will be used to assemble the family of disc controller boards.

Hong Kong stake

TELECOMMUNICATIONS group Cable and Wireless in which the government has a 49% stake, has bought a 34.8% share of the Hong Kong Telephone Company for £143 million. Cable and Wireless already has an 80% subsidiary company in Hong Kong which last year made over half its overall group profits.

10 more in store

LEADING US computer retailer Computerland plans to open 10 more stores in the UK this year in addition to the two in Southampton and London that began trading in November 1982. Computerland now has 440 stores in the world, 300 of them in the US.

Systime chairman is axed

by John Kavanagh

A BOARDROOM battle at UK systems builder Systime has forced out long-serving chairman John Parkinson.

But Systime's executive directors, including founder and managing director John Gow, denied it was a condition of the £8 million investment by US giant Control Data.

"It's our institutional shareholders who want this," Gow said.

Parkinson helped build the company from a £1.2 million turnover to £44 million in eight years.

As one senior man put it: "Without him we would not be here today. He has done an absolutely wonderful job."

The shareholders wanted a new, independent chairman with no personal stake in the firm.

PARKINSON . . . Axed

Parkinson has 8% of the shares. This will fall to 4% when the Control Data deal is finalised.

There is no question of the directors walking out if Parkinson goes. They say they will accept what is best for the company.

Parkinson is to set up as a business consultant.

Mitel delay is a blow to ICL

by Kevin Cahill

ICL's AMBITIOUS networking strategy has received a serious set back as telecomms supplier Mitel announces a nine month delay on its key SX 2000 exchange.

The set back has occurred as at least one broker withholds a forecast for ICL's likely sales and profits in 1985, pending clarification of mainframe strategy.

The delays to the Mitel SX 2000 Private Branch Exchange, known as the DNX 2000 inside ICL, are due to delays in getting British Telecom approval.

George Smith, Mitel's marketing director in the UK says the company has had difficulty in defining the British telecommunications specification for 'maintainability' of the software which runs the SX 2000.

Smith said that Mitel did not have experience of the BT approval procedure, and had gone for a "fully featured piece of equipment."

BT approval now is unlikely "before December" and all customers are aware of the position, Smith said.

Smith categorically denied that Mitel was experiencing any difficulties with its CMOS based 8980 control chip. He was backed up by sources at ICL who said that the hardware development was, if anything, ahead of schedule.

ICL already has one Mitel PABX up and running at Letchworth for development work and a second machine is being installed at Feltham this week.

ICL has made the DRX 2000 the centrepiece of its ambitious networking strategy and the device is intended to handle all data and voice transmissions between a users own sites and other external systems.

Brokers in the City, who have been keeping a close eye on ICL following the company's two recent cash calls for £130 million, are sanguine about the effects. Most brokers had not built any of ICL's own projections for DNX sales into their forecasts and therefore do not have to make any adjustments to their own estimates of ICL's sales and profits.

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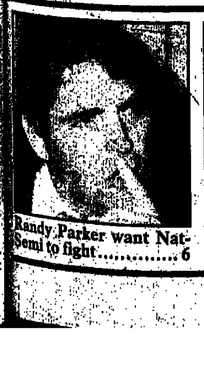

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Travel industry takes to Future

by Robert Parry

SCOTTISH micro builder Future Technology Systems is poised to pull off a record multi-million pound deal with the UK travel industry. The two-year-old company last year took a 1,000-system order from the Association of British Travel Agents (ABTA). There are similar deals being fixed up with equivalent associations in other countries.

The company has shipped 400 systems this year – more than in the whole of 1982, says managing director Peter McHugh.

The success with finding volume outlets by dealing with a trade association like ABTA has encouraged FTS to seek similar arrangements with other businesses. The legal profession looks set to become the FTS' next target.

The machines the company produces share an architectural core with its own Series 88 16-bit multi-function machine and the Orion microcomputer it builds for Office and Electronic Machines – whatever the external disguise.

"Established companies have problems in keeping pace with technology advances," says McHugh, "so they come to companies such as ours to buy in products.

"But they don't want to be seen to be selling the same machine as everyone else – for reasons of image and pride as much as anything – so we provide a design and development service."

Developments in the pipeline include more peripherals and faster processors for existing machines, plus extended office automation facilities such as networking and added communications facilities.

A portable machine tying into existing systems is on the cards, too, but has no set timetable for introduction.

In the UK, FTS is growing fast. It has just added a second plant in Beith, which almost doubles space for production, and has moved to bigger offices in London. To fund this continuing growth it will raise money by a private placing this year, and McHugh is looking to move to the Unlisted Securities Market next year.

The first export markets FTS aims to crack are in Europe, but the company is dipping a toe into US waters by exhibiting at May's National Computer Conference in California, and is looking towards Australia and South Africa.

The first distributor overseas is in Holland, Daisy Systems, which will take £1 million worth of product a year.

"The biggest European markets are France and Germany," says McHugh, "but they need a degree of specialised handling.

"We are looking to joint ventures and deals that involve sharing technology – for example complementing our microcomputer workstation with a partner's PABX."

The most likely joint ventures opportunity in foreign markets is with travel agents.

"The great thing is that 90% of systems are the same whichever country you are in – because of the standardisation of ticket issuing by the airlines," says McHugh.

Following the ABTA deal last year, FTS has gained the approval of the Universal Federation of Travel Associations, and is in direct contact with a number of ABTA equivalents around the world in its bid for more travel business.

McHUGH . . . Looking at joint ventures and deals that share technology.

Week in Parliament
Telecomms Bill reaches Committee stage

by our Parliamentary Correspondent

THE Telecommunications Bill this week was finally pushed through its Commons Committee stage after 161 hours discussion with the help of the "guillotine" which the government uses to overcome opposition delaying tactics.

The Bill now goes back to the Lords for a second reading there and then returns for a final reading in the Commons.

Stan Orme, shadow Industry Minister, warned the government that the opposition would fight the bill to the last.

At the end of the committee stage, which had been bogged down by marathon speeches from opposition spokesman John Golding, Information Technology Minister Kenneth Baker gave a moment of light relief by presenting the committee's chairman Janet Fookes with a collection of satirical verse which he has had published.

Meanwhile, in the Lords, junior Home Office minister Lord Elton suffered close interrogation about the use of computers in immigration control. The Home Office used two computer systems, he told Liberal peer Lord Avebury.

One of these at Bootle, Merseyside, is used by the Immigration and Nationality Department to match the landing and embarkation cards filled in by passengers at immigration control.

The other system at Harmondsworth was for the Immigration Service Intelligence Unit and was not linked to the first, he said.

Elton added that experiments for terminals that read passports automatically and linked to a computerised warning list had been at Terminal 3 at Heathrow Airport. And plans for equipment at the Croydon headquarters of the Immigration and Nationality Department to process applications for UK citizenship were well advanced.

Back in the Commons, Under Secretary of State for Industry Patrick Jenkin announced during the final stages of the budget debate that the West Midlands had been singled out for a drive to encourage firms to take on new technology.

Trade Minister Peter Rees said that computer imports had risen 109% since 1978. Exports rose 88%.

Racal appeals

RACAL-MILGO, data communications subsidiary of Racal Electronics, is making a last attempt to overturn a high court ruling that it had infringed patents of Motorola subsidiary Codex by appealing to the House of Lords. A High Court in July 1981 ordered Racal-Milgo to pay all net profits it had made from sales of the modems since the mid-1970s to Codex. A similar case is pending in the US.

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HARDCASTLE . . . Breaks away

Triad pays for its independence

by George Black

SYSTEMS house Triad last week paid £300,000 for its independence from British Oxygen and completed the dissolution of the giant's computing empire.

In 1980 British Oxygen held a £35 millions' interest in computing services, but early last year it announced it was pulling out.

Triad is the last component of the group to go, though BOC retains a toehold through the Stock Exchange's financial service Datastream, of which it now owns only 34%.

Triad Computing Systems, which was 40% owned by BOC, supplies mainly turnkey systems based on Perkin-Elmer, DEC and Systime hardware, serving the City of London financial institutions and the oil industry.

Its managing director, Tony Hardcastle, said the split had been carried out without shareholders having to find any extra cash. Triad is expected to show an income of £2½ millions at the end of its financial year in April, with profits of around £200,000.

Most of the BOC computing group was acquired by Thorn-EMI electricals, after BOC opted to concentrate on gases, medical supplies, carbides and welding.

Latins want British professionals

by John Riley

A CAMPAIGN has been launched by an international organisation to attract British DP professionals to work in Latin America.

The Geneva based Intergovernmental Committee for Migration (ICM), which was set up 30 years ago to manage the refuge problem in Europe, is now concerned with the transfer of technology from developed to undeveloped countries.

The scheme is like an advanced version of Voluntary Service Overseas, where specialists are employed at local rates in Latin American countries.

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The County Hall	Pinstone Street
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tel: 01-633 5909	tel: 0742 755215

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Users force IBM to keep the old

by John Kavanagh

USER pressure has forced IBM to stick with its ancient VM operating system. VM does not fit in with IBM's SNA network architecture but its users wish to stay with an operating system which they say is robust, reliable and easy to maintain. IBM is having trouble persuading them to move to its flagship MVS system.

These points emerge from a survey of 56 IBM users by research firm Xephon Technology Transfer. And Xephon says this "exceptionally good response" shows the "active interest that VM inspires among technicians."

But this loyalty to VM is causing problems. The survey report points to the "surprising" number of installations which still use VS1, now going out of use, with VM. VS1 users are under pressure from IBM to convert to MVS, with IBM playing up the availability of the TSO time sharing system under MVS. But, says Xephon, the VM time sharing system, CMS, is better than MVS in many ways, so "much of the incentive to undertake the horrendously expensive conversion to MVS disappears".

This leaves many users with a VM set-up which only has "clumsy and inefficient" hooks into the SNA network architecture. As a result the main weakness users identify in VM is lack of full SNA compatibility.

Unfortunately, says the report, this presents formidable technical problems and is one of the less likely enhancements. But the "outstanding" performances of CMS will guarantee VM a long life.

VM in Practice. 41pp. £29. Xephon Technology Transfer, Kings House, King Street, Maidenhead SL6 1EF.

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Alpha UK arm calls in receiver

by Robert Parry

ALPHA Computer Systems, London-based supplier of US-built microcomputers from Alpha Micro Systems, has gone into receivership. Alan Hall, of chartered accountants Chipchase Jarvis, was appointed receiver on March 8, and is negotiating with potential buyers.

The company is continuing to trade, completing outstanding orders and renegotiating contracts, says Hall.

Until May last year the company was called Alpha Microsystems UK, and acted as master European distributor for the California-based Alpha Micro Systems, designer and manufacturer of the 16-bit machines.

Alpha Computer Systems came under the wing of Transfer Technology International, a holding company set up under chief executive Leslie Button to develop and market a range of computer products and services.

The receivership will "categorically not affect TTI," says Button.

LEVY . . . Flew to Los Angeles last Friday.

Altergo's money man is back in US

by George Black

ALTERGO's managing director Leonard Levy has quit after a row with his partner Raj Thomas.

Levy, formerly a Wall Street stockbroker, joined the firm only three months ago. He brought an abrasive management style to Britain's top IBM-software house, which quickly led to a wave of resignations. Now the firm is left with a clutch of big international contracts, but a dwindling number of senior managers and it is actively looking for new capital.

Levy and Thomas were said to be old friends before the partnership began, with Thomas coaxing Levy out of semi-retirement. The New Yorker had no previous experience of the computer industry. But he was said to own real-estate in California, which included a beach, that was to be either used as collateral for a bank loan or sold to raise cash for the company.

He talked of putting $2½ million of his own into Altergo – but this week the firm would not say whether he had ever done so, only that Levy's "commitment, whether real or not" had to be replaced. Thomas is believed to have gone to the City last week to find capital from a merchant bank.

Levy flew to Los Angeles last Friday and was not expected to return.

It had been clear for several days that fresh trouble was brewing, when arranged meetings began to be cancelled without reason. On Levy's resignation, ex-staff were taken by surprise, saying that he was not the type to go unless he felt he could not achieve what he had set out to do.

Altergo had been steadily dividing into two camps behind the scenes – those who followed Thomas's milder style and those who, like Levy, felt the time was ripe for radical change.

First to leave was Dick Jones, also an old colleague of Levy, who supported his aims but was not happy about the way they were to be implemented. Next was director Dave Brownlee – followed by a group of five managers who formed their own rival London-based company, christened Bluebird Software.

Bluebird's managing director Brian Walker said last week: "What we needed there was financial backing, not a new managing director or structure." With him went Barry Whitesman, Clarry Garrow, Charles Banfield and Stuart Mitman.

Levy merged the four operating companies into one new unit, Altergo Information Systems, and promised a new emphasis on selling.

But the exodus continued, with Chris Dunsford leaving from Dallas, Bobby Gray from the European office and Mike Carswell and Terry Sheridan from Manchester.

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DHSS urged to put people before IT

by John Riley

COMPUTERS should be used to cut through the red tape on the dole offices and make life easier for social security claimants, thinks the National Consumer Council.

The government-funded NCC is worried that there is too much emphasis on technology and not enough on quality of service in the Department of Health and Social Security's £700 million 15-year plan to computerise all 1,200 UK benefit offices.

To ensure this, the NCC wants the director of operations, who is still to be appointed, not just to be a computer expert, "but to have a real interest in improving the quality of services and protecting the rights of claimants."

Some 13 recommendations were sent last week to the DHSS in an effort to ensure better service for consumers. These involve restructing the system to make it more friendly, for example by setting up smaller offices to link with the central network via microcomputers, ensuring full privacy protection, and by providing immediate information on claimants' rights.

Director of the NCC, Jeremy Mitchell said: "At present, people claiming one benefit may not know there are others to which they are entitled. DHSS staff themselves may not know – but the new technology would put that information at their fingertips at the press of a button.

"The danger which we wish to avoid is that by simply grafting computers into the present offices, the system will become even more remote and the opportunity to decentralise the system will be lost," added a spokesman. A standing committee to ensure that the interests of all who are involved are represented was also proposed.

Civil rights row could kill computer evidence law

by George Black

THE Home Office has come under attack for its handling of computer legislation in the Police and Criminal Evidence Bill.

One of the Bill's provisions could make computer evidence admissible as evidence in court, including printouts generated automatically without any human involvement. Up to now computer evidence has only been accepted when it was originally input by a keyboard operator. The Bill would override confusing case law and, industry people hope, clear up the matter once for all.

But the Bill, which is now at the committee stage in the House of Commons, is taking heavy flak from the civil liberties lobby, over clauses which would extend police powers of search.

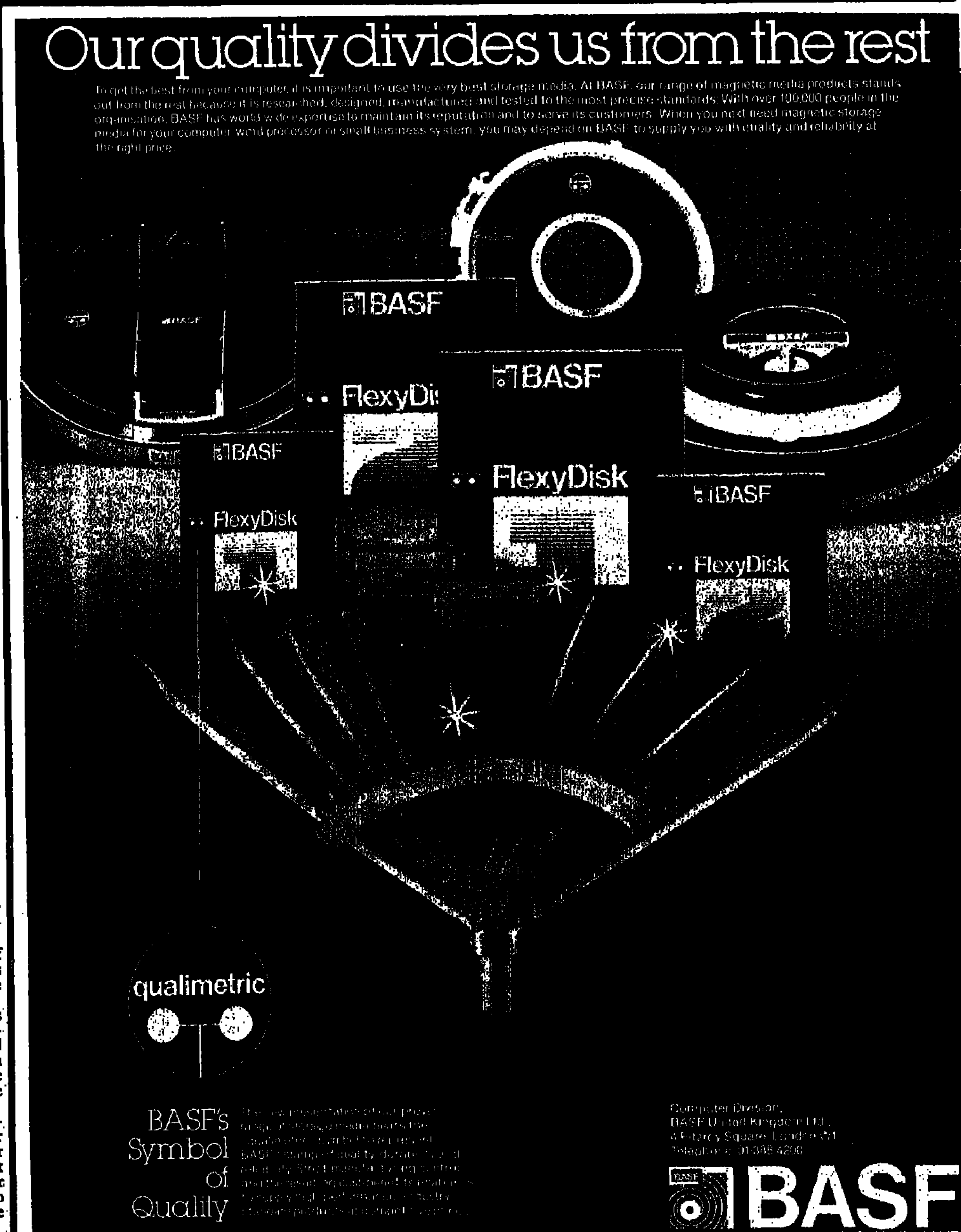
And leading figures in the computer world are worried that the Bill could fail completely because of this.

A barrister specialising in computer law, Alistair Kelman, said: "The Home Office claimed the government wanted to bring in legislation on computer evidence in a non-controversial way. Yet they have combined it with one of the most objectionable proposals of any they have put before the House."

He described the plan as "downright mischievous" and suggested that the Home Office could be marshalling its support from the computer world to gain some of its objectives in extending police power.

Patricia Hewitt, general secretary of the National Council for Civil Liberties, said the computer issue should have been kept separate and dealt with in another Bill. "We were very surprised to see it mixed up in this Bill," she said.

KELMAN . . . Home Office plan is "downright mischievous."



Mitterrand sacks his meddling man

by Jack Gee

FRENCH President Francois Mitterrand has signalled a switch to "hands off" treatment for the country's computer and electronics industry – half of which is now State-owned – by ousting Jean-Pierre Chevenement, Minister for Research and Industry, in a government reshuffle.

Chevenement, the most senior of only a handful of ministers dropped in what is essentially a game of musical chairs, has been under increasing criticism for interfering in the day-to-day management of the nationalised groups.

He has particularly antagonised Thomson-Brandt's chairman Alain Gomez and CII-Honeywell Bull's Jacques Stern. Chevenement drew fire from President Mitterrand himself at a recent Cabinet meeting for "meddling" and "bureaucratic behaviour".

When the new government, still headed by Prime Minister Pierre Mauroy, was announced in Paris it was revealed that Chevenement had asked to be relieved of his portfolio at the beginning of February after his methods were the target of Mitterrand's criticism.

Chevenement also ran foul of Telecommunications Minister Louis Mexandeau for trying to create a single State-controlled group to develop and manufacture electronic switching exchanges. Chevenement wanted to merge the activities in this field of both Thomson and Compagnie Generale D'Electricite's subsidiary CIT-Alcatel and also introduce ITT's former subsidiary Compagnie Generale De Communications Telephoniques.

But, as Chevenement cleared out his office desk at the Ministry for Research and Industry, it was revealed in Paris that CGCT will continue to exist as a separate entity.

The new incumbent whose title has been reversed to become Minister for Industry and Research, is Laurent Fabius who until now has been Minister for the Budget.

Fabius said on his appointment: "The priority is to give confidence to businessmen and industry so that they can plan for the future."

Fabius, as ebullient and ambitious as his predecessor, has antagonised the French business community by persuading Mitterrand to introduce swingeing taxes on industry and a wealth of tax which the minister originally designed to include factory equipment. This was later exempted.

Mitterrand has certainly given Fabius instructions to let the heads of the nationalised firms have a freer hand in running their businesses. At a lunch with the President a few weeks ago at the Elysee Palace their complaints about Chevenement's methods certainly prompted the plan to get rid of him in the Cabinet reshuffle.

Commenting on Mitterrand's dissatisfaction with him at the time, Chevenement, who is head of the extreme left wing of the French Socialist Party, said: "A minister keeps his trap shut. Otherwise he leaves the government."

■ Plessey Microsystems is opening a sales office for France to expand its already well established business with French original equipment manufacturers (OEMS), marketing manager Norman Williams said in Paris.

Richard Bowles, the newly appointed sales manager France, will operate from an office in Trappes, a Paris industrial suburb "in order to put our money where our mouth is," Williams announced.

Williams said that Plessey Microsystems was confident that it could make a great success in the French market in competition against other makers of bubble memories and standard multibus systems.

He told *Computer Weekly*: "Our biggest market for semiconductor standard products today is the United States where we are beating the Americans on their own ground. In California people talk of "doing a Plessey" as a synonym for being strongly competitive.

Williams said that Plessey's existing customers in France who have signed up over the past two years include both government and private firms some of whom required equipment for "particularly rugged uses".

This seems to confirm that Plessey has already succeeded in winning French Ministry of Defence contracts and suggests its customers could include Matra, Thomson-CSF and Electronique Marcel Dassault, which handle the major military electronics contracts.

Marketing manager Williams said: "We have a distinct advantage. Our experience in semiconductors is good enough to be of benefit to French firms. Nobody in the world can match us in bubble technology expertise.

"We can be of particular value in France to customers who need something other than a standard system."

CHEVENEMENT . . . antagonised Mitterrand.

Northern pupils catch the micro bus

by John Riley

THERE are no conductors with the latest microcomputer bus kitted out at Salford University.

The bus, the first of two, was handed over recently by Salford City Corporation, and will be used to provide microcomputer education to schools in the North-West.

Known as Mobile Education Centres, both buses will carry up to 15 microcomputers, a handful of academic staff and a range of software, to provide on-the-spot training, demonstrations and advice to schoolchildren and others.

The project is funded by Campus (the Campaign to Promote the University of Salford), an organisation set up in 1981 in the aftermath of the swingeing cuts in Salford's grant. Campus has several hundred local member companies, which give grants to projects after weighing up their relevance from an industrial viewpoint.

Salford University takes an active role in promoting computer education within the region, and most of its activities are co-ordinated by its Centre for Computers in Education, headed by Dr Edward Flinn.

Salford has a contract to run the electrical and control technology centre for the North-West, as part of the Department of Education funded Microelectronics Education Programme for Schools (MEP). The director of the MEP North-West regional centre, Dr John Martin, is also a part-time lecturer in Salford University's physics department.

Another area co-ordinated by Flinn is a large number of short microcomputer courses for the general public. "These have been a great success," he said. "The CP/M Pet course, for example, has had 600 people on it over the past two years." Salford also runs an NCC (National Computer Centre) funded industrial centre to advise local businessmen on choice of computers.

■ The Manpower Services Commission may introduce computers to its training workshops and community projects, said its chairman last week.

"Both offer an exciting opportunity to apply the power of information technology equipment to traditional craft skills," said David Young, MSC chairman. "Armed with a computer and knowing how to use it, a carpenter or metal worker can find whole new horizons and opportunities opening."

Young stressed the importance of information technology, and how he is taking steps to remedy the shortage of people with computer related skills.

Ethernet compatible repeaters come out

by Donald Kennett

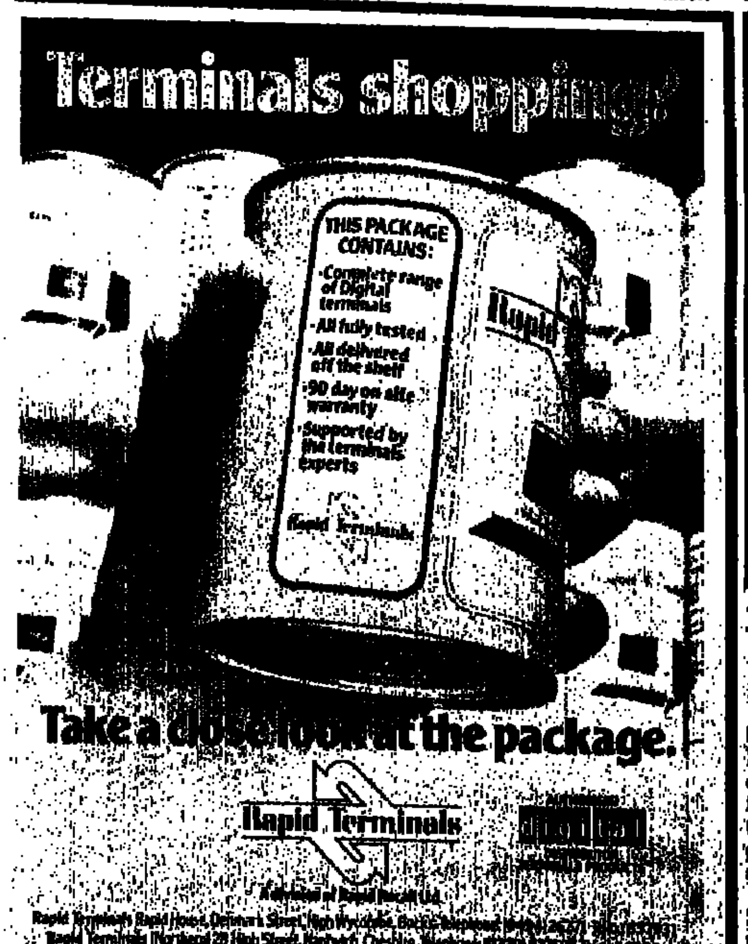
UNGERMANN-BASS, the California-based network manufacturer, has developed what it claims are the first Ethernet-compatible repeater units to reach the market.

Two types are available. The $2,500 local repeater unit is used to link one 500 metre length coaxial cable to another so that the maximum distance between stations on the network can be increased from 500 to 1,500 metres across up to three sections of cable.

Up to 100 lengths of cable can be connected to a trunk cable via local repeater units, allowing any station to reach any other across no more than three cables.

The other type is a remote repeater. These cost $7,700 a pair and they are used, one at each end of an optical fibre cable up to 1,000 metres long, to link one of the coaxial cable sections to the trunk, further extending the maximum distance from one station to another to 2,500 metres.

The company launched its first products for Net/One at the end of 1980. It recently released support for IBM's Binary Synchronous Communications protocol as a free enhancement to its network operating software and plans to do the same for the SDLC protocol used in IBM's SNA.



Salford University's micro double-decker will provide an education.

Philips exchange goes on trial

by Donald Kennett

PHILIPS has passed the first hurdle in gaining technical approval for its TBX 3000 digital private telephone exchange by winning 10 orders from companies willing to act as trial sites.

The exchange was launched last September and the 10 orders total more than £1 million. Several exchanges have been delivered already and the first one should be in use by next month. The company hopes the exchange will be approved by the middle of the summer.

The customers include a hospital, an airline, a local authority and a government agency, and the exchange is claimed to be suitable for small businesses as well as organisations needing thousands of lines on several interconnected sites.

The exchange is designed to handle voice and data and is of the non-blocking type, which means that all extensions and exchange lines can be in use at the same time. Switching systems manager Dick Bradberry said: "This is one new digital PABX which is being delivered right on schedule."

SALES BRIEF

ICL picks up a healthy contract

ICL HAS picked up a £1.7 million contract to install equipment for recording administrative details of patients at the North West Thames Regional Health Authority. There are also outline plans to install similar systems at North Bedfordshire, North West Hertforshire, Barnet, Brent and Victoria Health Authorities.

ITT switches East

US TELECOMS giant ITT has sold $5 million worth of digital switching units (PABX) to Japan's Nippon Telegraph and Telephone (NTT). The 400 units will be delivered over the next two years and will make up 40% of NTT's private exchange equipment in its offices.

Micros for BT

BRITISH Telecom has bought four Plexus P40 microcomputers running the Unix operating system from Keen Computers for £150,000. Three of the computers will be for development of BT's System X digital exchange, and one for developing software to be run on central mainframes.

Lisbon graphics

UK GRAPHICS specialist Sigma Electronics Systems has installed a microcomputer system with its own graphics T5684 terminal for computer aided design at the National Laboratory of Civil Engineering in Lisbon, Portugal. This follows Sigma's earlier Portuguese order for an image processor for satellite pictures.

Banks spend £4m

PHILIPS Data Systems has picked up orders worth a total of £4 million for PTS 6000 terminals from two Belgian banks. The ASLK savings bank has ordered 150 terminals computers with 125 workstations, and the Paribank has ordered 60 terminals and 370 workstations.

Box-office hits

SPACE Time Systems has clinched two more orders worth £300,000 for its theatre box-office management equipment to bring total sales to 13. City of Bradford and Preston Borough have ordered them to modernise entertainment centres.

BT likes Ferranti

FERRANTI has pulled off three more orders from British Telecom for terminals, printers and controllers for the Iwis/Mace project costing scheme. The order specifies 30 PT7 terminals, 60 VDUs and 30 printers for installation at BT's London, South Western and Wales and Marches regions.

Store picks Sperry

SPERRY Univac has sold two of its 1100/61 mainframes for $2.5 million to one of Canada's largest chain of retail chain stores, General Distributors of Winnipeg. The computers will use Sperry's applications developer *Mapper*.

Money for gas

SHELL has given Serck Controls a £1.75 million contract for remote control equipment at two offshore gas complexes in the South China Sea. The system, called Scada, will enable remote control of operations and monitoring of equipment on the platform, and the acquisition and storage of online data.

MoD doubles

THE Ministry of Defence is to more than double its spending on office automation systems from US-based distributed computing company Datapoint. £150,000 of hardware and software will join the £100,000 of Datapoint kit already installed in the MoD.

F International makes a US hit

by George Black

F INTERNATIONAL, the company which has built its reputation on women's programming skills, has taken over its American equivalent.

The Hertfordshire software house has bought Heights Information Technology (HIT), of White Plains, New York State, for an undisclosed amount. Connections between the two organisations go back to 1978, when F's then finance director Anne Russell met Argonaut Information Systems president Luanne James at the European Computing Services Association – they were the only two women there.

The association led to James setting up HIT under a two-year licence from F International in November 1979.

F International decided to acquire HIT to strengthen his grip on the fast-expanding US software market. Company secretary Penny Tutt said the company had learnt from its experience establishing offices in Holland and Denmark that it was vital to have a local presence.

The UK based company now has 700 staff and 90% are women. Tutt said it was the only company that advertised equal opportunities for men – but few men who were main wage-earners for a family were keen to join, as wages were not guaranteed.

"We recruit people with very high technical abilities, they must have had five years' experience and cannot have been out of work for more than two years," Tubb said. Also they must be available for 25 hours' work a week including two or three days visiting clients. HIT had been set up on exactly the same basis, so there would be no problem integrating their activities.

Steve Shirley, the company chairman, who founded the organisation as Freelance Programmers 21 years ago and was awarded the OBE in 1980, is now in the US to set up the link and to look for a local manager for HIT.

Burt Grad, who helped to found HIT and was president of the software section of ADAPSO, the trade assoication, in 1981/2, will stay on the HIT board. There is no current plan to change the name or structure of the American firm, which is thought to have some 70 people on its payroll.

F International, which has been expanding steadily in recent years, expects a turnover of around £6 million in 1983/4. Until two years ago it was headquartered at Chesham in Bucks, but has since moved to a country house at Berkhamsted.

Two major contracts won in the past couple of years were for the Iraqi State Engineering Industries to do a £100,000 feasibility study of distributed computing systems and a long-term survey for the British government's Central Computer and Telecommunications Agency.

It also has a number of multinational customers.

SHIRLEY . . . Her company advertises equal opportunities – for men.

Sell for Systime and drive a Lotus

by John Kavanagh

UK SYSTEMS builder Systime is creating over 80 jobs in the next six months and offering its salesmen a month's use of a Lotus. It has started with the unusual step of spending around £18,000 on a national television advertising campaign to find 20-plus high-flying sales staff.

And by October the 1,400-strong company expects to have taken on a further 30 software people and 30 engineers.

This is believed to be the first time the national UK television network has been used to recruit staff. "There's a serious national shortage of good sales staff so we're trying something different to attract people," said personnel manager Steve Williams. The company is using Channel Four, plus national, local and trade papers.

Incentives for sales staff include a month's use of a Lotus Esprit car for the best performance each month and a year's use of a Rolls Royce for the year's best salesperson and sales manager.

Horizon stars slam BBC's computer show

by Philip Hunter

THE two British participants in last week's BBC Horizon programme Better Mind the Computer have slammed the show for being sensational and for failing to explain the potential benefits of artificial intelligence.

Professor Igor Alexander of Brunel University who talked about an image processor that can distinguish between people's faces, said he thought the programme might make the government think again about investing the money recommended in the Alvey Report which is still under consideration. "If I was Maggie I'd wonder if I'd want to release £350 million to people who want to make computers master of the race," he said.

Alexander pointed out that past BBC Horizon programmes had an important formative influence on government investment. The last Labour government had been quick to put money into micro development, after Jim Callaghan saw the Horizon programme on The Challenge of the Chip.

The programme began with Professor Edward Fredkin, who has recently taken over as head of one of the world's largest artificial intelligence units at the Massachusetts Institute of Technology (MIT), spelling out his fear that computers would reduce humans to slaves in the 1990s.

Professor Donald Michie, who talked on the programme artificial intelligence research at Edinburgh University said he had not seen the show, but thought there was not enough emphasis on the UK.

One important thing about AI, said Michie, is that it puts the user in the centre of the computing process. "AI has the potential to make man master of his own job," he said, and added that it was a shame the programme had failed to point this out.

Horizon producer Laurie John defended the programme and said: "I was anxious not to make any comment from myself, the commentary was very deadpan."

Ten go in OTL merger

by John Riley

TEN managers lose their jobs as a result of today's merger between word processor manufacturer Data Recall and office automation company OTL (Office Technology Limited).

"The idea has been evolving for about two years," said Spud Taylor, managing director of the enlarged OTL, "and results from the areas of synergy between the two companies."

Data Recall loses its name, and as part of the deal its parent company, City banker Kleinwort Benson, gets 60-65,000 shares (about 3%) in OTL's holding company, ITL (Information Technology). The merger is being celebrated with a 10% price reduction on OTL products, which now include Data Recall's Diamond 7 word processor.

It is understood the job losses were divided roughly equally between the two companies.

Bookham-based Data Recall has several hundred customers, mainly within medium sized organisations, for the Diamond, but lacked a support organisation and resources for future development.

OTL, of Winchester, has a small customer base, comprising some 20 large organisations, for its mixed voice and text office automation system Imp (Information Management Processor). It does, however, benefit from shared resources with automonous sister companies Computer Technology and Network Technology.

"Bringing together the two companies and their products really is a case of two plus two equals five or six," said Taylor, "as we now have a broad product range to take on the Wangs and IBMs."

Taylor's short-term aim is to provide transfer files between the Imp and the Diamond, and in the longer term, by 1985, to have built a single family of workstations to serve both the medium and large markets. Taylor also sees OTL, CTL and NTL coming together.

TAYLOR . . . "A case of two plus two equals five or six".

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MICRO NEWS

ICL's local govt grip is breached

MICROCOMPUTER supplier Multicomputer of Brentford has won its way into the ICL-dominated local government computing market. It has signed its biggest single order, £160,000 worth of multi-user microcomputer systems, with Cardiff City Council, for machines to link with ICL mainframes.

"The significance for us is the opening of of the local government market," says Multicomputer's sales director Archie Thomas. "We have received bigger OEM orders, but Cardiff is the biggest single order."

Nine M200 systems, in configurations ranging from two to 10 users with 10 to 70 Mbytes of Winchester disc storage, will be supplied. Six of these will be connected to the ICL mainframes through CO3 links, the others will act as stand-alones at first.

Thomas reckons these too will eventually be connected to the mainframes. Each user has a separate Z80 processor housed in the central M200 box.

The contract went out to tender nearly two months ago, and Multicomputer won through against competition including ICL's own DRS systems.

"We have shown we can implement CO3 protocols to ICL machines now," says Thomas, "and we'll be going aggressively for local government installations." Since last May, when Multicomputer started bringing the US-built kit from Molecular Logic into the UK, 60 systems have been installed says Thomas, and machines are going in at around 15 a month.

THOMAS . . . Getting aggressive

Multicomputer is selling abroad too, and has just closed a deal for its first system in Israel. Closer to home, it has a subsidiary company in Germany, and is looking to work hard on the other markets in continental Europe.

The first of the Cardiff systems was installed a fortnight ago, and the rest will be in place by the end of the month, says Thomas. They will be used for applications such as housing waiting lists, transfers and vacant properties and transport engineering costing.

NatSemi fights hard in high tech with the 16000

NATIONAL Semiconductor, last year's late entrant to the high tech microprocessor rave, is fighting hard to take its NS16000 family right to the front. In general the greatest level of microprocessor business still comes from the vast number of four-bit microcontrollers sold for consumer and control applications, but NatSemi is concentrating its efforts on the top-end family.

"Our focus for the future is very much the 16000 family," says Randy Parker, vice-president and general manager of NatSemi's Microcomputer Systems Division. "It gets the lion's share of our R&D budget, even though most dollar revenue still comes at the bottom end."

Parker sees the strength of the low-end microcontroller market continuing, but being encroached upon by the rapidly growing 16-bitters and beyond. He reckons on a 40 to 45% annual growth rate for processors like the 16000, with its 32-bit architecture. Already the devices are appearing in a large number of varied application designs.

"There will be 16000s everywhere," he claims — in personal computers, in small business systems, in military applications and in care. "The natural design-in cycle is one or two years," he adds, "and we are just starting to see the first products coming through."

Among the supporters of the 16000 family NatSemi numbers office automation and distributed processing company Datapoint, systems software companies Digital Research, Whitesmiths and Translation Systems, as well as the UK's own Micro Focus and Acorn Computers.

Parker says that the first member of the family, the 32-bit internal but 16-bit external 16032 processor, is now shipping in volumes, and is ahead of schedule on winning acceptance for designs. "And that's on a very conservative method of classifying design wins," he adds.

With the 16/32-bit 16032, NatSemi is directly up against its major competitor Motorola's 68000, a similarly high performance 16/32-bit beast. Both companies are also sampling the reduced (eight-bit) bus version of their respective architectures, and are poised to move to the fully 32-bit models.

"We have had the first silicon of the 32032 (the 32-bit external bus chip) and have been debugging it and ironing out the problems," says Parker. "We should get functional samples on the next run."

This will bring full 32-bit processors to customers in sample quantities by July or August, he reckons, which should put it ahead of Motorola in the race.

"For once we are not competing against Intel with our microprocessors," he says, "which is an unusual feeling. Motorola is the direct competition."

When NatSemi announced its plans for the family last June, the chip to follow the 16032 and the 16008 eight-bit bus version was to have been a "bilingual" processor, the 16016, which would directly execute 8080 code. But this machine seems to have been quietly dropped.

"We have re-evaluated our position on the 16016," says Parker, though denies that this necessarily means that the device has been without trace. But in NatSemi's latest 16000 family brochure, the 16016 is absent from the family tree.

So the future battleground will be 32-bit processors, and developments of these that integrate more functions on to the single processor chip. NatSemi's offering here will be the 32132, which will include CPU, memory management and floating point processor all on one device, built with two micron geometries in CMOS.

"There will not be an NMOS product at this level of integration," states Parker. "To be commercially viable you will have to move to CMOS VLSI to cope with the power dissipation."

This is an attitude shared by most of the major semiconductor companies. Intel, for example, has said that the bulk of its major new products will use its CHMOS III flavour of CMOS processing.

Parker adds that NatSemi has considerable expertise with its proprietary P^2CMOS technology as used in its NSC800 eight-bit processors, and has gained a lot of experience in VLSI CMOS through work with its partner Westinghouse and Carnegie-Mellon on the US government's VHSIC (very high speed integrated circuit) project.

Co-operative development work like this, and like the research co-operatives springing up in the US, will play an increasingly large part in device development.

PARKER . . . "There will be 16000s everywhere."

NEC may produce Scottish dynamo

by Kevin Cahill

WHEN the Queen opens NEC's new chip making plant in Scotland this July she will be told that NEC intends to build 64K random access memory chips, microprocessors and 'other products' there.

The most likely 'other product' will be the 256K dynamic RAM that NEC is currently sampling in large numbers to many of its customers.

Shozo Shimizu, NEC's executive vice-president said in Tokyo that the 256K RAM was not likely to be in production this year. This is mostly for marketing reasons, according to Shimizu, who implied that the company could go into volume production at any time it chose. He disclosed that NEC had been sampling its key customers for quite some time.

The presence in the UK of a plant which will be capable of producing such advanced chips — the 256K is now hotly tipped as the successor to the 64K dynamic RAM which has only been in volume production for a year or so — will give the government interesting food for thought over the Inmos factory in Wales.

Inmos has announced no plans for 256K production and is only just moving towards volume production of its long awaited 64K dRAM, but the company is working on a 256K product, but, like the Japanese manufacturers, declined to give any dates for introduction of the product.

The market for 256K dRAM in 1990 is predicted to be worth a total of around $2 billion.

The first companies to get into the race to produce the new bigger memory chip were NEC and Toshiba, working together on patents evolved from the Japanese government sponsored LSI project.

At the moment the companies seem to have parted ways and are producing the new chip separately.

Mitsubishi, one of Japan's largest industrial corporations, decorated last year's annual accounts document with a carefully 'censored' version of its 256K dRAM. Interviewed in Tokyo the company would only say that it was, like NEC, sampling customers. No date for introduction was given but the idea that Mitsubishi was ready to move the moment one of the other companies announced volume shipments, was very clear.

At the same time that NEC and Toshiba sent out their first samples of 256K chips in early 1982, Oki electric also announced samples. Oki, which targeted 64K and 256K dRAMS as long ago as 1979, had a disastrous fire at its main factory last year.

Initially, the company said that it would be back in production within weeks but commentators say that volume production of 64K rams is only now beginning again. Hitachi, another mainstream Japanese electronics company with a large semiconductor division, has been sampling a 150/200 nanosecond NMOS 256K chip since the third quarter of 1982, though not in volume. The dynamic RAM followed a static CMOS 250 nanosecond 256K chip targeted for large scale sampling in the June quarter of 1982.

American reaction to the bold progress of the Japanese into the finer chips has so far been fairly muted.

The early fuss over the 64K dRAM, where Japan captured an early lead in the initial marketplace, still rumbles on. Four American companies have announced early introduction plans for their version of the 256K chip.

According to the *Wall Street Journal* Motorola, Texas Instruments, Intel and Mostek all have plans to be in delivery before the end of the year. IBM announced a 288K dRAM last year.

Red-faced Motorola corrects its chips

MOTOROLA'S disclosure last week of an increased failure rate on a batch of its 64K dynamic RAMs comes embarrassingly soon after acknowledgement by Hewlett-Packard (HP) of Motorola's "outstanding quality" components.

HP, a large consumer of semiconductors, has in the past been a harsh critic of the quality of US chip makers' products, and only a few weeks ago cited Motorola as indicative of a trend throughout the US semiconductor industry towards higher quality parts.

Now Motorola has identified and corrected a "manufacturing anomaly" at its Mesa, Arizona plant, one of two producing 64K dRAMs, which has doubled the failure rate of the devices. It has had to pull around two million units, in various stages of processing, out of inventory, and recalled affected parts.

Motorola's deliveries will be interrupted by the unscheduled shortage of shippable parts, but it hopes to bring the affected wafer fabrication plant back in line with planned production rates within three months. The other plant is unaffected.

No failures in customer field applications have been reported with the affected devices, and it is predicted that failures in working systems will be less than predicted by the reliability evaluation tests. Many real-life applications take place in less demanding environments than the long term tests, which predicted failure rates of 72 parts per 10,000 after 3,000 hours running at 55°C.

But the company is taking no chances. It has sent a letter to all its 64K dRAM customers alerting them of the problem and offering to replace devices from the affected batches. Motorola says this is a precautionary measure. It expects returns to run to hundreds of thousands of units.

The news of Motorola's failing comes hard on the heels of its problem on the back from Hewlett-Packard, which has in in the past rated Japanese memory chips more reliable than US-built ones, but now sees that quality gap narrowing.

US manufacturers like Motorola have to keep good relations with such large customers, often helping them in to quality improvement projects, if they are to survive the Japanese onslaught.

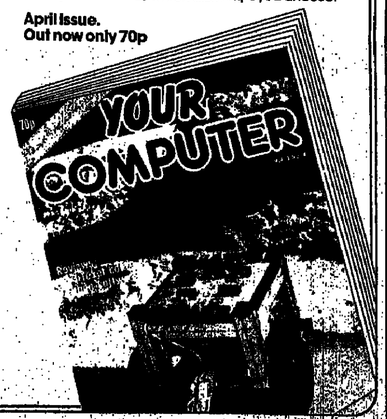
Micro News is compiled by Robert Parry

Get closer to your micro

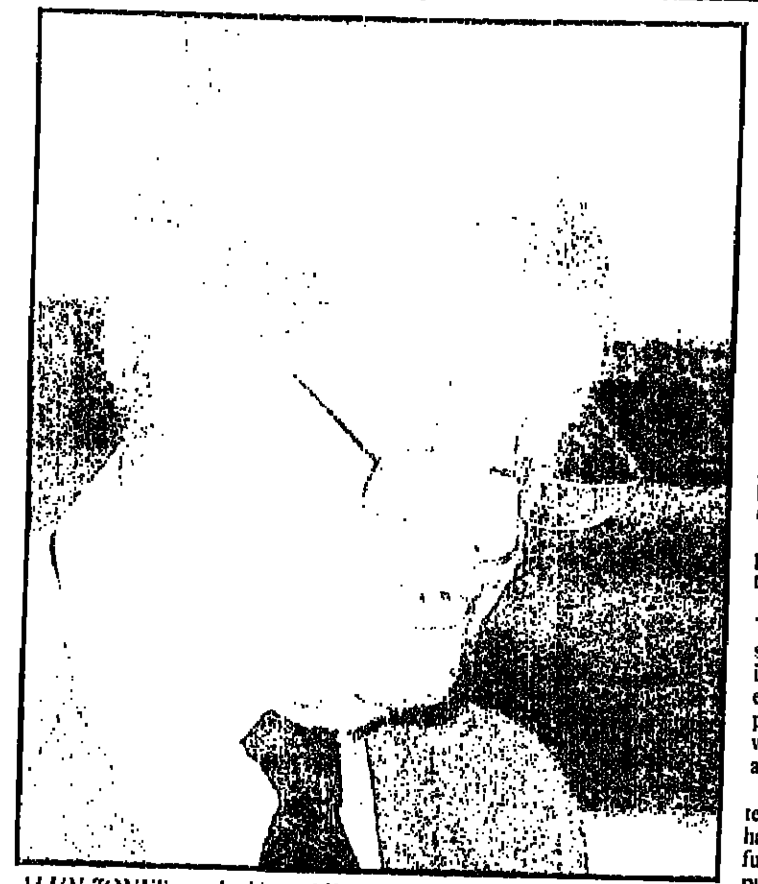
This month sees the start of a new 6502 Machine Code series—the language used by the BBC, Oric, Commodore 64, Vic-20 and Atom. Learn this mathematical tongue and you'll be able to communicate directly with your micro and speed up your programs.

Read, too, about a complex sound generator for the Spectrum. Whether you want to make laser explosions or just make your Spectrum quack like a duck, it will do the job. How good is the software for the Dragon 32? We tell you in a survey which also helps you choose.

April issue. Out now only 70p



Reborn Ferranti bounces back



ALUN-JONES . . . Architect of Ferranti's recovery.

FERRANTI, now reckoned as one of the classic management turnarounds of recent British industrial history under managing director Derek Alun-Jones, is shortly expected to produce improved profits and turnover for the year to March 1983.

Last year Ferranti made pre-tax profits of £23.8 million on turnover of £307 million.

City stockbrokers Spencer Thornton and Co have issued a short review of the company, and industry analyst Tony Shepherd expects Ferranti to show compound growth of around 20%, with sales of about £350 million and profits of about £30 million.

Shepherd notes that the Computer Systems Division of Ferranti has a huge order backlog, with further significant export orders in prospect.

The likely profit in the CS group, which produces complex equipment for use in the North Sea and which is currently fulfilling a £50m defence contract for Brazil, will be around £9 million according to Shepherd.

The fastest growing division in Ferranti is electronics, which Shepherd says has derived major benefits from the growth in the personal computer market. Ferranti's star, however, is brightest in the semi-custom uncommitted logic array field. The company is a world leader in both the technology and the marketplace with better than 30% of the world market in these chips. This market is reckoned to be growing at around 50% a year.

Shepherd says Ferranti is sole supplier of the ULAs to a number of personal computer companies including Sinclair and Acorn, and he notes that output of personal computers is still rising strongly. Ferranti is also a major supplier of ULAs to companies like Nixdorf, Plessey and British Telecom.

The big involvement with communications-oriented companies spills over to Mercury, the new deregulated long distance carrier, which is using Ferranti to provide the microwave links in its microwave transmission system.

Ferranti has now established a major bridgehead in the Far East through a joint development with one of Hong Kong's biggest electronics producers, Wheelock Marden.

Ferranti Wheelock provides a design and evaluation service to customer engineers on site in Hong Kong. Finalised designs are transmitted to Ferranti's home base in the UK for logic and circuit tests and when the lay-out is complete, sent back to Hong Kong.

JOHNSON . . . Growing th...

Brokers' bureau profit tops £800,000

NANTWICH-based stockbroking bureau NMW comfortably beat the forecasts of annual profits with a figure of £801,000 on turnover of £2.93 million. Forecasts from brokers had put the likely profit at around £750,000, a big rise on the previous year's £545,000 profit.

NMW is a specialist bureau service running on twin ICL machines. The company provides stockbrokers with the "back office" service which produces contracts for shares bought and sold.

A number of big brokers retain their own mainframes but the cost of reprogramming for legislative and Stock Exchange regulation changes is high and this gives NMW one of its main advantages, according to the managing director Brian Johnson.

He also points to NMW's growing share of Stock Exchange business. Up to 35% to 38% (depending on how you calculate the figure) of all share transactions on the Exchange are now done through NMW.

Reporting the figures, NMW chairman Brian Bibby said the profits were very satisfactory and he gave an obscure pointer towards the future when he drew attention to the current high volume of trading on the Stock Exchange. NMW charges a fee for every transaction and increased transaction volume translates directly to NMW's bottom line.

IBM sees neglected brokers

IBM IS preparing to make financial presentations to brokers in London – something the company has not done for a long time.

The move, announced this week, and set to take place on May 12, took the London financial community, long used to neglect by IBM, by surprise.

No specific reasons were given. IBM spokesmen merely said that the shares were widely held in the UK and the company felt it was time to address those shareholders.

The company authorised an additional 100 million shares last year and so far has not made any statement about what it intends to do with them. Brokers in New York say they do not expect IBM to come to the market for finance for several years.

IBM shares have risen from $6 early last year to a shade over $100 last week. The shares might have gone even higher, but New York brokers reacted sharply to a change in the way IBM did its accounting at the time of the annual results in January. The change added $400 million to IBM profits.

There is renewed interest in the company in the US and Daniel Mandresh, head of technology investment at Merrill Lynch, the world's largest finance house, recently targeted IBM as the share to buy for the next several years.

IBM had turnover to December 31, 1982 of $34.4 billion and profits of $4.4 billion.

According to Mandresh, calling IBM a mainframe company may be convenient but is hardly totally accurate any more.

Mandresh said there was little likelihood that a $10,000 personal computer would ever replace a mainframe – rather the contrary, he seemed to think. The more micros you had the greater would be your need for mainframes to control the data, he said.

Last year IBM made a major foray into the personal computer market amid forecasts that one day the company would have 60% of that marketplace too. More seasoned commentators noted that even if that happened it was unlikely to contribute more than 4 or 5% to IBM's sales revenues.

Peripherals boom

by John Riley

MINICOMPUTER peripherals sales will double in the US by 1987, predicts a survey of 21 leading US peripherals manufacturers.

The survey, which examined the American non-captive market for nine specific peripherals commonly sold with minicomputers, expects the market to increase from $2.7 billion in 1982 to $6.5 billion in 1987.

The fastest increase is likely to be with 8in and 14in Winchester disc drives, forecast to grow from $292 million in 1982 to $1.47 billion in 1987. It also sees additional rapid improvement in price-performance ratio and storage capacities which should allow 5¼in Winchester drives to have capacities of over 110 Mbytes by 1987.

The director of the Peripheral Suppliers Association, Mike Perry, considers this a realistic growth rate for Europe, and added: "As long as we maintain the same architecture there will be a need for large size memory storage associated with minis."

Other major growth sectors are fully formed character printers, serial matrix printers, 8in floppy disc drives and display terminals. Slower markets are forecast for magnetic tape. The only declining market is expected for removable hard disc packs.

Brokers expect up to £20m half-time at ICL

ICL'S HALF-YEAR ends next week and brokers are revising their estimates of the likely profits before the company closes its books and ceases to be able to converse with the moneymen.

The period between the closure of a company's books for a financial period and the formal announcement of the figures on the Stock Exchange is known as the "close season" when the company is prohibited from revealing its figures.

Traditionally ICL has turned in its best results in the second half. This was partly caused by the salesman's bonus being loaded towards September, the year end. Managing director Robb Wilmot has recently changed the system to get a more even spread of sales during the year and most forecasters are now suggesting a profit for the first half of £12 to £15 million.

Neil Barton, analyst at Henry Cooke, Lumsden a Manchester broker which follows ICL, says he expects £15 to £20 million for the half year.

Barton is sticking with his £60 million forecast of profit for the year.

And he puts likely turnover at £900 million for the year as a whole.

SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Date 25/3/83 Index 131.03 Change +10

Pence 1983 High	Pence 1983 Low	London Stock Exchange Stock	Pence Price	Pence C'nge	$ 1983 High	$ 1983 Low	US Stock Stock	Price	Change
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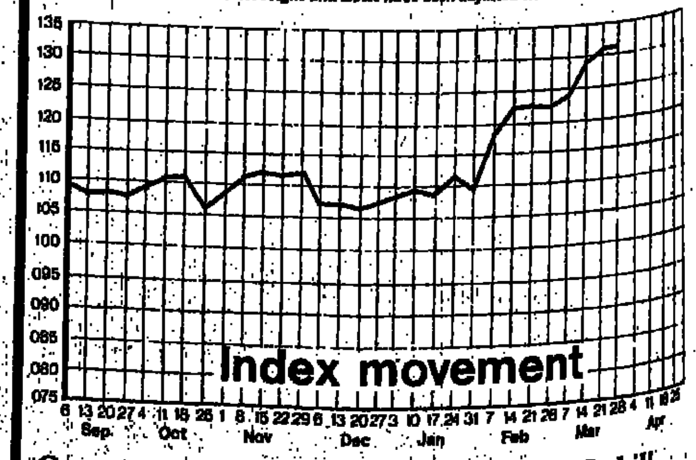
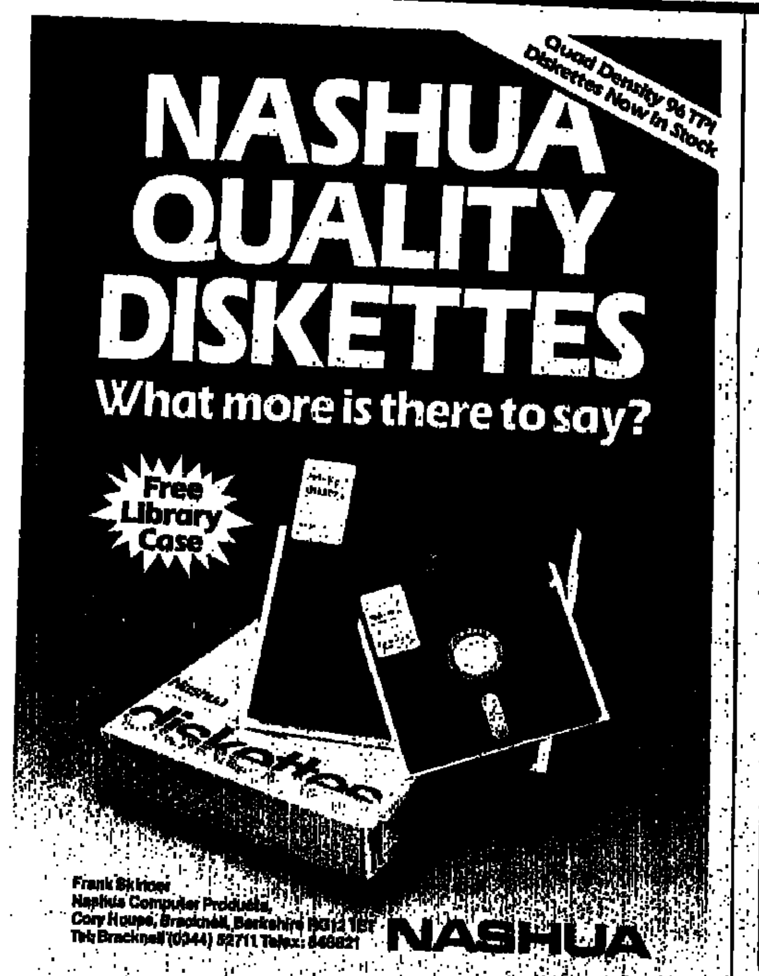
The table shows the closing prices on Thursday, last week. The Share Index is based on the price of the UK companies in the table. Highs and Lows have been adjusted where necessary.



Company News is compiled by Kevin Cahill.



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Experts face the strain

by George Black and John Riley

SOFTWARE experts struggling to establish world industry standards face physical exhaustion as they drag themselves from meeting to meeting.

So says Peter Bono, chairman of the American National Standards Institute X3H3 committee, who claims that members of the US computer graphics standards committee are threatened by "burn-out" as rapid changes outpace their ability to keep up.

Bono's argument is supported by Owen Davidson of the National Computing Council, who sits on the International Standards Organisation O1516 Committee on systems communication. "I think the problem is the speed the committees have to work. It takes a long time to get an international standard out."

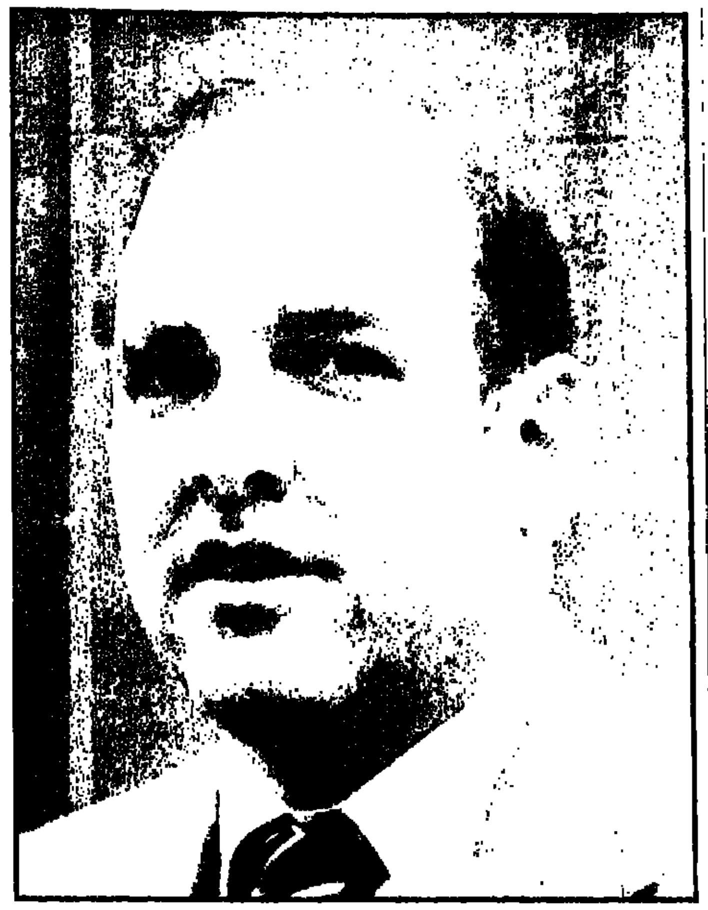
Speaking at the Computer Graphics for Management and Productivity Congress in Berlin, he said: "Most of our members don't have full-time jobs in the standards area and take part in their own free time. This can lead to burn-out."

The graphics committee, which has 40-45 voting members as well as being attneded by a number of outsiders, meets three times a year with a task group meeting occasionally between sessions. Main concern this year is to get the GKS (graphics kernel system) standard approved.

The European-generated GKS standard, which operates on the interface between graphic utility systems and applications programs, is ousting the de facto unofficial Core standard.

A revised GKS, the GKS 7.2, which is said to take the best of Core and of GKS, was published by Ansi in January and will be voted on in the spring.

"Industry should find professional societies to work on proposals, but should not push into the standards area too soon," said Bono."Ansi is only a vehicle – the marketplace determines when it is really time for a standard."



BONO . . . "Experts face burn-out."

16-bit famine deepens the software crisis

THE software crisis will get worse before it gets better, suggests a business survey just published.*

A virtual famine of 16-bit software has resulted in companies burning the midnight oil trying to convert 8-bit programs to the new generation of machines, it says.

There are simply not enough specialists to cope with the scale of demand building up. And the British software industry is hampered by foreign companies scooping up a proportion of the scarce skills.

The report quotes Imperial Software Technology's prediction that the world software market could rise to £80 billions by 1985. That might mean a British market for micro business applications of £500 millions, it says.

The micro industry has grown so rapidly that standards tend to take a back seat in the rush to get new hardware sold. Lack of compatibility between 8-bit software and 16-bit hardware was a symptom of a weakness in the micro field, which had not occured in the field of larger machines developing more slowly, the report states.

Unprecedented demands from end-users would fuel the software boom, and at the same time make the crisis that much more urgent.

The growth of the 16-bit scene would bring about the fairly rapid demise of the 8-bit micros and put more pressure on mini suppliers, whose growth rates were said to have fallen from 75% to 10%.

**Office Software*, from Key Note Publications, 28-42 Banner St, London EC1Y 8QE, price £60.

New face fits new Cullinet

ROBERT Goldman has been promoted to president and chief operating officer of Cullinet Software – the new name given to Cullinane Database Systems.

He succeeds the founder, John Cullinane, but a company spokesman said the move was a "mark of recognition" for Goldman, not a stepping-down by Cullinane. He remains chairman and chief executive officer and intends to devote his energies to corporate development.

NATO is stronger with the French

SOFTLANT, the NATO systems houses' consortium, was strengthened last week by the addition of the major French software company Cap-Gemini-Sogeti.

The group, which formerly consisted of British, American, German and Italian firms, has held talks with several French organisations in an effort to find a new partner. It chose CGS, already a NATO supplier.

The French are already represented through their Defence Ministry on the Brussels team which co-ordinates the NATO air command control system (ACCS).

Softlant, formed last summer, brought together the British Defence Software Group – ICL, SPL, CAP, Leasco and Stephen Howe Ltd – with the West German ADV ORGA, the American ORI and the defence subsidiary of the Italian Olivetti, Syntax.

Last week the CAP – no relation to its cross-Channel namesake – took over Stephen Howe to gain a better hold on the avionics field.

CGS, with 3,000 employees in 30 computer service companies, had a 1981 revenue of around $143 millions. Its main interests have been in professional services, turnkey systems, software design and implementation, marketing packages and support and consultancy.

But it has had a growing involvement in weapons systems, command, control, communications and intelligence (C31) as well as other real time military and naval applications.

John Chisholm, managing director of CAP Scientific, part of the British CAP Group, and a member of the Softlant Committee, said CGS was "a natural choice" for a French participant in the venture.

CHISHOLM . . . "CGS was natural choice."

Lab packages set to grow

MEASUREMENT and control software packages designed for laboratories are heading for explosive market growth, says a new American study.*

Increasing use of personal computers is fuelling the demand for these programs, the researchers argue. The number of micros bought for measurement and control is anticipated to rise from 29,700 in 1982 to 144,000 in 1987.

Their users lack the skills to write their own programs, according to the report. It is quicker and cheaper to buy packages in an area where standardisation is relatively easy.

Chromatography packages could be expected to find a ready market, and about $140 millions worth of specialised software could be sold in 1987, it is predicted.

Software suppliers, however, had been ignoring the demands of the laboratory while the more lucrative areas of word-processing, financial analysis and graphics still remained to be satisfied.

* *User-configured small computer-based data acquisition and test and measurement systems: a strategic analysis*, from Venture Development Corporation, 1 Washington St, Wellesley, Massachusetts, 02181, US.

STC develops with Manchester

MANCHESTER University is to work with Standard Telephone and Cables (STC) on software development under a new three-year agreement. Head of Manchester's computing department, Professor Cliff Jones, will lead a team of consultants from the university at Standard Telecommunication Labs at Harlow, Essex.

And STL is to pay the salary of a researcher, Brian Monahan, formerly of Edinburgh University, to co-ordinate the joint projects.

Jones, who spent most of his career with IBM, will be looking at ways of making program specification unambiguous.

Software File is compiled by George Black

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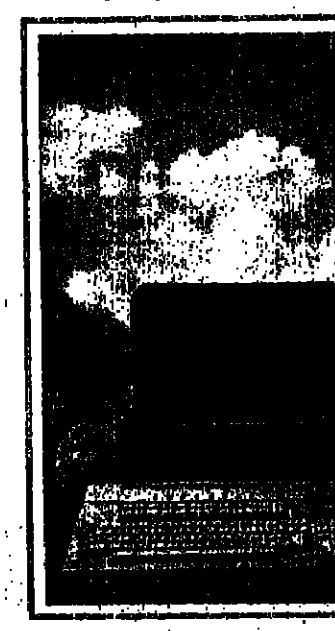

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PROFILE

Completely mobile manager who enjoys stirring things up

ROY TAYLOR claims to be completely portable. "I'm the machine-independent manager," he says. "I like running companies whatever they do. Then I plan a macro and go into another industry." But now he thinks he has found the industry which is most interesting, so probably he won't be transported again. The in-house joke is that he liked the product so much, he bought the company. The company is Package Programmers Ltd.

"It's not absolutely true, though," he admits. "It's also said that I bought the company so I would get the people. Which is also only partly true. The fact is that I saw its potential when apparently no one else did and it was still very small."

He turned himself into a businessman after studying mechanical engineering at Imperial College, London, by postgraduate courses at the London School of Economics and the General Motors "Tech" in Michigan. His early career took him from business consultancy with PA to the managing directorship of Vydor Batteries.

When Vydor was sold to Hawker Siddeley in 1968 he left to become director of an animal feeds firm, Crosfields and Calthrop. After it was acquired by Dalgety, he picked himself up and put himself down again in another environment – with McLintock, Mann and Whinney-Murray, a computing consultancy owned by a firm of chartered accountants.

"It was here that I really learned about the computer business. This was what led to my proposal in 1975 to take over PPL, which had just been established by Anthony del Tuffo."

He dismissed with a contented chuckle an inquiry about how much he had paid for Package Programs

"Well, let's just say that I got it cheap. Unfortunately del Tuffo left us I arrived. He jumped too soon, which was a pity, as he would have been valuable to us."

The first product was a payroll system written in South Africa by the Gers-Warren Partnership, he recalled. This was Q-Pac, which had to carve out a territory from the market leader, Peterborough Software's Unipay. Where Unipay leant towards IBM users, Q-Pac aimed at the ICL field and succeeded.

"We did overlap into each other's area, but quite frankly our conversions in those days weren't that good."

He admitted that the conversion of Software International's general ledger package from IBM to ICL kit had gone "horrendously wrong", costing twice what the company had anticipated. The programs were a mixture of Cobol and Assembler and it was going from IBM Assembler to Plan that caused much of the problem.

"Around this time I started to hear a bit about structured programming and I decided it was time to get rid of the artistry and to introduce some science.

"I was sure that structuring was the only way forward."

TAYLOR . . . Got rid of the artistry and introduced science.

The dropping of Q-Pac arrested PPL's growth in the late seventies, but this was made up for by adding the agencies of Cyborg and Execucom products in the UK.

"If people leave PPL, they usually do so in the first six months, as soon as they know it's not for them. I prefer it that way."

In the last couple of years in which Package Programs has been growing at the rate of some 50% per annum, Taylor has begun to fret about possible complacency.

"I'm a natural stirrer. If it starts to grow too big, I like to stir it up by splitting things into divisions and making them compete with one another. Yes, I do think that small is beautiful."

DOWNTIME

Talk your way out of this one

WHILE Barclays, Lloyds and three other high street banks blow corporate trumpets about their wonderful new shared cash dispenser network, which won't be operational for at least two years, rivals NatWest and Midland have quietly got on with the job and set up their own shared system which will commence operations this May.

Not only will the Midland/Natwest system be on stream two years ahead of the one you've heard so much about, but it will also be a 24-hour, seven-day operation unlike the rather restricting office-hours-only facility which will be offered by the five banks.

How is it that Midland and NatWest have beaten the other banks so convincingly? Well, if informed sources are to be believed, the five bank consortium faces multifarious problems, not least of which is the inability of Barclays to make the latest batch of IBM automatic teller machines talk to its IBM mainframes.

Apparently, over a hundred of the latest IBM cash dispensers have been languishing in a warehouse for over a year due to "interfacing problems". One of the dispensers has actually been installed at a London branch, but is equipped with an "out of order" sticker which appears to be a long-term fixture.

Nice work if you can get it

SIR George Jefferson, chairman of British Telecom, has come in for more than a little opprobrium following his hefty 21.4% increase in salary, up from £57,650 to around £70,000 a year. "He must be crying all the way to the bank," comments a union spokesman.

And Alan Chamberlain, secretary of the union committee representing 240,000 BT workers, thinks there is an invidious new trend at work – payment by results. Only here the results are the number of redundancies achieved.

Two reasons for the increase, a Department of Industry spokesman told me. One, the government wants to bring the salaries in line with the private sector. Two, high salaries are needed for such a dirty job, with its attendant bad publicity.

Chad

Plastic age

THE furniture business has been rocked to its castors by two important events.

One is the exhibition of furniture for the Eighties at Liberty's store in London, where it was possible to pay £5,000 for something in plastic to stand a vase on.

But perhaps more significant is the entry of one of the world's biggest computer companies into the furniture business, the inimitable Digital Equipment.

DEC's prices are not in the same league as Liberty's, a modest £125 for a stand on which to place one of its printers, or £225 for a little table to accommodate a whole little system.

Very elegant they are too, I don't mind telling you, in an exquisite blend of imitation and real plastic.

Blown up out of proportion?

BUILDING a software system that is secure enough to satisfy the defence-wallahs is a headache, says John Dobson of the Microelectronics Applications Research Institute in Newcastle. According to him defence bureaucrats are incredibly paranoid about having anything sensitive left lying around on discs, in case the enemy, they say . . . .

In case what? asked Dobson, surely either the Russians blow us all to bits, in which case there will be no data left intact to steal, or else we shall get some kind of warning that they are plodding down the M4 towards the Malvern Hills shan't we?

"Ah well," replied a faceless bureaucrat. "It all depends. The enemy might not be the Russians, after all, it could be CI division across the road."

Ongoing verbiage situation

YOU might think it's all beer and skittles here at *Computer Weekly*. But just take a look at an example of the gobbledegook we are sent.

"As a result of the growing usage of cold fingers, representatives from this industry and government developed standard BS34, the Practice for Determining Vacuum Chamber Gaseous Environment Using a Cold Finger, under the jurisdiction of committee E-21 on Space Simulation and Application of Space Technology and its Subcommittee on Contamination of ASTM."

PLATFORM

We can show the world that we can lead

YOU'LL be delighted to learn that this is World Communications Year. You may be puzzled and wonder why you haven't heard more of it. British Telecom et al are just getting around to organising a committee on it.

Well it's this communications stuff you see – mustn't spread it around too much, mustn't waste it.

And speaking of waste how is BT doing these days? Does anyone really know?

First of all it needs lots of money, then it doesn't because it's "tightened up on suppliers", and this when it has overpaid suppliers by £160 million. *(Sunday Times Business News*, January 30)

I love to see people making profits, but monopoly profits are something else. A monopoly "profit" is the difference between how much they can get away with charging you and how much they can get away with wasting.

If you can't take your business elsewhere then there is no market, no competition, no price mechanism, no measure of anything.

Don't let anyone bamboozle you into muddy thinking – it's a simple matter of choice and you have only a binary one. Use them or don't.

This leaves you with the last choice – the market of misery (take it or leave it) – but it hardly gives you a dazzling shopping spree with endless opportunities.

So back to the pseudo profit we had to pay them. Last time BT "robbed" us (raising prices with impunity could be called disarming robbery) and made a huge profit. Then it played Robin Hood, taking money inequitably and re-distributing it equitably. If a politician bribed you someone might squawk, but if Buzby overcharges and then slips you a rebate you didn't earn, it's called "customer relations".

So now that the company has made another smash and grab it's going to pay people who don't use the phone for *not* using it!

Meanwhile it's trying to emasculate Mercury.

Once upon a time in a far off land there was a wicked witch called Ma Bell (Atrocious Terrifying Termagant) who found a naughty wiley child named Datran who ran a cheap alternative digital service. When Ma Bell's little goblins in Congress couldn't bend the legislation enough she dropped the tariffs so that little Datran died. Then Ma Bell offered new digital services at sky high prices. She took pity on all the poor customers of Datran and took them in (didn't she just!). The moral of the story, says Ma Bell, is that nasty cowboy competitors can upset poor little confused customers. Of course we do things differently in Britain, don't we?

There is another Ma Bell nature now which involves a [illegible] eagle who was born over 200 years ago out of a declaration of independence and whose soaring flight depends on freedom.

The eagle has just heard that Ma Bell might not be a nice cuddly nanny but a wicked witch in disguise. He can't get the full story (those goblins again!) but he's angry and he's snapping his beak at Ma Bell. Meanwhile a lion and unicorn have suddenly woken up and found that they've been surrounded by great coils of copper wire and red tape.

Are we going to fall for this blatant manipulation of our future?

A society is made of communication. If we have an impoverished exchange of information we have a dying society. To increase the opportunities and richness of connections we have a resurgent, vital growing future.

If you stay under Ma Bell's watchful eye you'll slowly wither away on a pernicious form of interested development.

Do we really need an even more bureaucratic and dishonest one ruining our networks?

BT's "commercial innovations" so far have been pathetic. BT Gold – a rationalisation of something the company tried to stop us using for years. Finally it buys a system from the States and tries to sell it to us as something new.

BT Silver–Touch-Tone input and voice output are new after 10 years. That is if you buy it from the States and repackage it.

Viewdata – another piece of PR 'bull' – modified TV terminals and modems have been around for 20 years.

System X – BT's version of the Titanic mixed up with the Holy Grail.

The abolition of the ring – those heavy suppliers are still bumbling on. BT's pet dinosaurs are clutching firmly at her skirts, the bland leading the bland.

Teletex – the new high speed telex which is supposed to be cheap but for the extortionate proposed prices of the terminals and the unwillingness of the Ring to innovate *(Observer Business News*, February 13).

X-Stream – suddenly we've got wide band but only after the demise of Mercury.

"BT's system is second to none in the world" apart from being unquantifiable what are we supposed to compare? One bunch of bureaucratic myopics holding monopoly control of the future against another?

Let's get the dead hand of the undertaker off our networks.

Let's have several networks, the price per bit will drop like a stone.

Let's use the optical cable networks now proposed.

Let's seize the opportunities of the converging technologies and watch our future grow with pride. We can show the world – we can lead by a very long way.

For starters let's have a simple safe interface between us and the old network while it slowly withers away. We can build it today – it's not difficult.

Let's start building telex (electronic mail) adapters for every machine and flood the country with information.

Will you join me – now? Or will you wait for the committee on committees to table a question for the sub-committee?

John McNulty

10 YEARS AGO

FROM COMPUTER WEEKLY OF MARCH 29, 1973: With the minimum of publicity and fuss, the government communications network, known as Lola (London Online Local Authorities) which linked the boroughs of Hackney, Harringey, Tower Hamlets and Hillingdon, was completed . . . A key-to-disc system, available with as few as four keystations at a rental of £370 a week was introduced by ICL. It was called the Key-Edit 50 . . . Control Data acquired ITT Data Services for an undisclosed sum . . . Government aid to the computer industry for 1972/73 was estimated at £13.3 million.

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, March 31, 1983

Heading for self made nightmare

THERE will be no shortage of people keen to draw a moral from the recent troubles at Altergo, the UK's leading IBM bespoke software house.

And no doubt there are as many lessons to be learned as there are pundits to teach them. But which ever way it is looked at, it is a sad business.

In the simplest terms, a significant and prosperous software company is encountering what would seem to be an avoidable problem. Raj Thomas, chairman of Altergo, took on a US financier as managing director in the hopes of gaining access to an infusion of funds. Three months later the financier, Leonard Levy, has returned to the beaches of California, and a number of Altergo employees have left for greener pastures. Thomas must be held responsible for a miscalculation.

But the problems at Altergo reflect a more general problem in what should be one of the UK's brightest hopes for industrial expansion. Software firms need money, lots of it and soon, but those who have the finance generally do not understand the problems of software development.

They are reluctant, as Levy apparently was, to leave the day-to-day running of the business to those who understand the game.

A tough, trouble-shooting approach may well have a role to play in any sort of firm, but software programs do not come off a production line like Smarties. Nor can analysts be motivated in the same way as factory workers. In short, very special skills are necessary to conduct a software operation successfully, and they may not be the same as those held by the average entrepreneur, commercial expert or financier.

What has happened behind the scenes at Altergo has not yet been spelled out, but there is the suggestion that Levy was looking for short term, immediate results. Let us hope that Altergo does better for itself next time, and that others think carefully before choosing backers.

The Altergo case is yet another indication of why the UK financial markets must adapt if we are to compete in world markets.

Avoidable problem

ALARM bells are ringing again about the prospect of a shortage in the information technology skills needed to pull the UK out of recession. A report from the Institute of Manpower Studies at the Univeristy of Sussex expects a five per cent fall in the number of electrical and electronic engineering graduates between 1984 and 1985, and a fall in mathematics and computer science graduates beginning in 1985.

But this is no cause for tut-tutting by the computing community. For in exposing the country's dependence on technology graduates it also highlights the pitiful level of trainee recruitment and staff training that goes on among computer users.

Richard Pearson, author of the report, points out that computer scientists are not necessarily needed by computer installations. What users need are intelligent, numerate people with aptitude; it should make little difference whether they have studied computer science or classics.

But if graduates of other disciplines are to become programmers they need training. Yet employers are only interested in computer science people or staff with at least two years' experience. This makes for a considerable problem today, despite the recession, as installations chase their ideal programmer or analyst.

Meanwhile trainees are coming off government-backed TOPS courses and the National Computing Centre's Threshold scheme raring to go – but finding themselves in the dole queue.

This is today, a time of slump. What the situation will be like if an economic recovery gets under way makes sweet dreams for job agencies but a nightmare for computer installations.

As Pearson at the Institute of Manpower Studies said, the market could go quite berserk. And it will be no use installations merely pointing at the government and complaining about cuts in university computer science places.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by Philip Dobson, of London, who wins £5. It (the computer) keeps your livelihood locked up in its innards like a train stuck in a tunnel. *Daily Mirror*

LETTERS

Flash of inspiration

WHILE we have noted with interest the controversy surrounding VDU glare and associated eyestrain, my company has been investigating another aspect of terminals which we feel is potentially far greater – the flashing cursor. Tests have shown that a flashing cursor will cause operators to enter data twice as fast as a non-flashing one. Furthermore if more than one flashing cursor is displayed on the screen the increase in key depressions is directly proportional to the number of cursors, although if more than five cursors are introduced it can become difficult for the operator to identify where they are on the screen.

We have concluded from numerous tests that a "stroboscopic aversion" effect is produced on the brain which in turn causes a subliminal reaction to "turn off" the flashing light by displaying a character on the screen.

Since subliminal advertising was banned in this country in the early 1950s due to its inherent dangers we would strongly recommend that a government committee is set up immediately in order to produce legislation for stopping this lethal form of brain damage.

NEIL WOODNICK
Wembley.

Pooling of experience

WHILE I am not in a position to confirm or otherwise the remarks made about the product TPM70 in your article on DEC software (CW, March 10), I would like to clarify a misconception about Systel that could be construed from the article.

Systel is not a re-marketed TPM/U. It is true that many of the TPM70 team migrated to Systime, and Systel is their brainchild. However, they pooled their experience and expertise together with software specialists from other areas, to design a Vax TP system. After two years gestation, Systel was born. Instead of being a waif, Systel has had strong guardianship!

Systel complements VMS, and offers many features needed for rapid development of efficient Vax software.

TERRY WILKINSON
Systel Marketing Manager,
Systime
Leeds.

Readable language

THANK you for telling readers about our Poplog system (CW, March 3), but I would like to correct a few minor errors.

Although I don't like Lisp myself, I would not agree that it is unreadable. People who are familiar with it find it very readable. However, for programmers accustomed to more conventional languages it is certainly a lot less readable than POP-11.

Readers may have gained the impression that because Poplog does not include incremental compilers for Fortran and Pascal, programs written in these languages cannot be combined with programs using POP or Prolog. In fact our VMS implementation does allow programs in other languages to be linked in.

I would not claim that POP-11 runs faster than Lisp, only that the richer syntax of POP-11 allows program development to be speeded up because of the extra-compile time checking. Some interpreted Lisp systems will run more slowly, since POP-11 is compiled, not interpreted, but compiled Lisp can be very fast, since run-time checks are omitted in many Lisp systems.

AARON SLOMAN
Reader in Philosophy and Artificial Intelligence
University of Sussex
Brighton.

Computers in schools

I AM sure that the graduates of Len Antill's Diploma in Computer Education classes are first-rate computer education teachers. They are needed in the teaching force.

But do not equate computer education with computers in education. MEP is concerned with ensuring that all teachers have an understanding of how the computer can be used across the curriculum generally, and in their specialised subjects particularly.

From the experience we have I know of no authority that expects the teaching of computer studies as a result of the basic awareness courses that are a condition of the government's inroads in schools scheme. They do expect teachers to begin to appreciate the kind of aid that the computer as a resource might offer in the classroom.

MEP's work in computer studies is to deepen the knowledge of existing teachers of the subject and not to provide central courses.

R. FOTHERGILL
Director
Microelectronics Education Programme
Newcastle-upon-Tyne.

Patent infringement suit

YOUR article Landmark Piracy Lawsuit to Go Ahead in US (CW, January 6) apparently resulted from a Press conference on December 15, 1982 by The European Software Company, a subsidiary of Boole & Babbage, Inc, in which I gave a two hour presentation on a new product line being introduced into Europe by Boole & Babbage through The European Software Company.

Your article ignored the significance of the new product line and chose instead to emphasise the patent infringement lawsuit between Boole & Babbage and Candle Corp that was mentioned in the brief question and answer session which followed the Press conference.

I wish to correct certain inaccuracies contained in the article.

First, in the lawsuit against Candle Corp, Boole & Babbage has alleged that Candle has infringed Boole & Babbage's patented data extraction technique by using it in software marketed by Candle. While Boole & Babbage believes that Candle's products do infringe the patent and that this is a very serious matter, Boole & Babbage has no reason to believe that Candle "pirated" or "stole" any Boole & Babbage software. Our patent, if upheld, gives us the right to prevent Candle or anyone else from using our patented invention, regardless of whether they copied the invention from our software, or derived the invention independently.

The statements attributed to me in your article were made in response to a general question about the importance of patent protection for software.

The title of your article may mislead your readers. Our lawsuit against Candle is not a "piracy" lawsuit *per se*, but is a patent infringement suit in which we are seeking to confirm the validity of our patent and stop Candle from using our patented invention.

Second, our patent was granted in 1972, not 1970 as reported in your article.

Third, the potential worldwide market for Boole & Babbage's new product is estimated at $300,000,000, not $3,000,000 as reported by you.

JACK E VAN JINGSBERGEN
President
Boole & Babbage
Sunnyvale
California.

Power of prayer

IT is all very well for Chad to pour his contempt on an old Aunt Sally like R.L. but I felt he was stepping into deep water (CW, March 10) with his piece The Power of Prayer. He is obviously not into the spiritual renewal that has been taking place over the last decade.

I believe this phenomenon has been encouraged in no small way by the computer industry. Unlike the 19th century scientific discoveries which were an undoubted discouragement to faith, the 20th century emergence of computers has given new credibility to the concept of an infinite God.

After reading Louis Robinson's article in the previous week's CW, can it be doubted that God does know the number of hairs on my head and the moment when each sparrow falls to the ground (Luke 12: v. 6,7.)?

I am not suggesting that God is a computer but I think computer journalists of all people should be circumspect in their disdain for a God concerned with the minutiae of our lives.

J. B. LUPTON
Derby.

Tail-piece

YOU have scraped the barrel completely dry in your search for quotations to provide a humorous tailpiece to your editorial (1984 and All That, CW, March 10). Apart from the fact that it does not seem particularly funny, it appears in the week following the release of a car which has a talking computer to remind the driver that he/she is running out of petrol.

You may not think that the "voice of the Maestro" is bright or metallic but surely you allow your journalist colleagues some measure of poetic licence!?

EUAN ROBERTSON
Great Missenden, Bucks.

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WORKPLACE

High-tech centre with antique feel

HIGH Technology, tradition and natural lighting are the three selling points of a new £10 million conference centre being developed from an old country mansion amid mellow tree-lined meadows close to Heathrow airport.

The centre, called Anugraha, will open January 1983 to give conference organisers a refreshing alternative to the dreary hotel venues.

"We are trying to establish a little mystique," says Anugraha marketing manager Osanna Jones. The beauty of Anugraha is, according to Jones, that traditional style and comfort, will be ranged alongside the highest technology like video conferencing, satellite television and an infrared wire free audio network for conference delegates to talk back to speakers.

Anugraha began as a country house built in the mid-1800s although incorporating many older features including Elizabethan fireplaces, oak panels and wood carvings. The building was gutted, with many features being temporarily removed, and a huge domed conference hall is being built in the middle. Many of the original features will later be put back in the building, a vast improvement on the twee imitations of antiquity that bedevil us today.

This domed hall can be divided into two levels by a rising floor, creating space for 500 delegates upstairs with the lower hall below the floor free for meeting rooms, an exhibition, or a banquet.

The periphery of the building is being converted into 110 fairly spartan single or double bedrooms which can accommodate up to 200 people.

The computer chosen to calculate delegate's bills and handle reservations also has a ring of antiquity about it, the timeless Digital Equipment PDP-11. But the peripherals are more novel.

Each delegate is issued a plastic card with his name, company and number, which he uses as a key to various facilities including telephone, and film shows.

More important, the card is used by delegates to attract the attention of speakers through an infrared talk-back system. Delegates insert the card into a handset, fixed like opera glasses on to the seat in front of them. This alerts the speaker, who is free to choose whether to let the delegate speak.

If the go-ahead is given, the delegate is given the command to speak on the infrared handset, and the details contained on the plastic card are displayed on a television monitor at the front of the hall.

Assuming that this system works, delegates will be spared the normal tedium of waiting first to attract a speaker's attention, and then for a microphone to be wheeled round to them.

Bookings have already been taken for the 1984 conference season, and a US travel agent has expressed interest in tele-conferencing. Anugraha is also organising SIBs, Special Interest Breaks for weekends, including golf, flower arranging and computers.

Modern points are liberally spattered round the building so that conferences can be linked to computers other than the PDP-11.

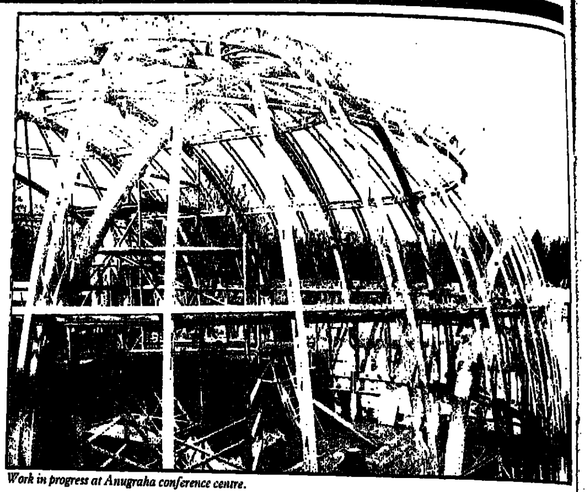
Most conference delegates seem either to jog, play squash or swim these days. Of this Anugraha is well aware, and the jogging facilities in particular are double cream with Windsor Great park beckoning close by. There is also an indoor sports hall.

With all this, what has Jones to say about the prices that have been fixed for all of 1984? "We are pitching into the middle of the market," Jones comments.

Daily rates range from £9.50 to £29, inclusive of food, room hire and VAT. The 24-hour rate with full board ranges from £56 to £105. The higher prices, which I would say entered the top of the market, apply to smaller groups, cordon bleu menus and single bedrooms.

It might be thought that delegates will be able to strip off and sunbathe as they listen to speakers drone on under the big dome. No such luck, since the dome is covered with lexan polycarbonate, which will have on the best authority will cut out the sunburning ultra-violet radiation.

Anugraha, I am told, is a Sanskrit word meaning "an unexpected gift".



Work in progress at Anugraha conference centre.

Winning Orange boys Harvey Bell (left) and Paul Philips (right) flanking team captain Michael Schulster and Enfield Mayoress.

Victory for Orange Hill

ORANGE Hill School romped home to win the schools' computing quiz organised by the North London branch of the British Computer Society by a crushing 39 points to 26. The three boys of Orange must now be fancying their chances in the nationwide BCS quiz to be held in Liverpool this July involving winners of the branch competitions.

Each of the three members of the teams were asked one question from each of eight sections including syntax of the Basic language, logic diagrams and the brief history of the industry.

One of the competition sponsors was Control Data, which generously handed one of its Plato computer-based training systems to each of the finalists. The other sponsors put up the prize money of £250 to Orange, and £100 to runner-up Barnet School between them.

The competition is part of the BCS Silver Jubilee celebrations and leads to a nationwide quiz sponsored by Computer Technology. But first there are two rounds of regional eliminators.

All washed up in Donegal

UNEMPLOYED computer technician Wayne Dickinson last week stumbled into Ireland after being feared lost at sea – and thanked God. The indomitable 39-year-old had been 142 days crossing the Atlantic, surviving on his home-made grain mixture and unquenchable Christian faith.

His boat was hurled onto the rocks of Aranmore Island off County Donegal leaving him to climb a 350 foot cliff to safety.

During the hours it took him to scale the cliff he paused to say: "God please if you want to kill me, kill me, but please don't hurt my feet."

Dickinson, who's from Florida, said he had undertaken the voyage to prove to himself that God existed. He had also promised to give up smoking if he landed at Falmouth. But he did not, so he shouted: "God, I've missed Falmouth. Why in the hell are you doing this to me?"

The crossing was made in a nine-foot boat called God's Tear, of which no trace was left after a pounding by storm force winds reaching Force 10 on the Beaufort scale.

He had lost all three of his radios in January, bringing him the solitude he had secretly wanted. "Why did Moses go into the desert?" Dickinson asked rhetorically.

Trifocal solution to bleary-eyed blues

A LONG session at the VDU leaves even the hawk-eyed a little bleary. For the middle-aged and long-sighted, the experience can be quite a headache. Many VDU operators with sight defects have found that normal glasses do not seem to solve the problem.

The reason is that the VDU is normally at arm's length from the user, while standard bifocal glasses focus only on objects closer than arm's length, or long distance. What is needed is a separate lens that focuses on objects between two and four feet away.

One answer is the trifocal lens. The bifocal lens has two parts, one for close work like reading, the other for distance vision. The trifocal lens is divided into three parts – one for reading, one for distance, and then the third part in the middle of the lens just for the VDU.

The trouble with the trifocal is that because there are three parts, each part is limited in size. The field of vision is therefore smaller. And a broader than average field of vision is needed for operating some of the large VDU displays available.

A variety of trifocal lenses are now available, so it is possible to have one designed that is suited to VDU users – perhaps having a large middle part for the wide-angle arm's length vision needed.

But the trifocal is not for everyone and some people will prefer a bifocal combining close and arm's length vision for VDU work, the close vision being needed for looking at the keyboard and reading print outs. A separate pair of glasses could be used for long distance.

Information on the possibilities can be had from the Optical Information Council (OIC) in London, of from the local optician. Anyone suffering from visual problems from use of VDUs, or indeed for any other reason, should have a full eye examination, making sure that the National Health Service pays for it.

Cambridge firm launches UK version of Lisp

LISP is an anarchic language. While the trend has been towards making languages portable between programmers and machines, and easier to read, Lisp is unlike. There are many different dialects of it, and the code is compact, but quite unreadable unless you know it.

Nevertheless it is the most popular language in the US for building artificial intelligence applications, but this is not surprising because it was designed for them. But in the UK it has not taken off.

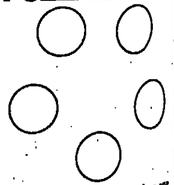
Graphical Software of Cambridge has just released a version of the language called Crest Lisp, a dialect close to the standard Lisp originally developed at Utah University.

Graphical has taken an interpreter for Lisp designed at Essex University and adapted it to run under its own Crest operating system.

This makes it available on machines using CP/M-86 and MS-DOS operating systems, including the IBM Personal computer, the ACT Sirius 1 and Future Technology Systems series 88.

"Will this one count my blessings and display them one by one?"

PUZZLER



THE problem here is to place one digit in each of these circles, so as to form a cyclic Prime number that is also cyclic in reverse. In other words, you have to make up a five digit series which generates a Prime no matter which digit is chosen as the first one of a round-the-circle sequence, and also no matter which way round the circle the number is "read".

See page 31 for the only possible set of digits.

Mator takes on 'unqualified' team

by John Riley

TEENAGERS are being taken in off the streets and taught to program in low level assembler by Sussex-based microcomputing specialist Mator Systems.

"We prefer to take teenagers who haven't been to Polytechnic or University, and we are not worried about whether or not they have A levels," said managing director Tony Pembroke. "In fact we find that those who have had further education seem to have lost a certain amount of competitiveness.

"In any case, some of our staff who have been to Polytechnics find that only 5% of the information they have learnt in four years is of any use working with us."

Mator deals in two main areas; protocol converters and complete package sub-systems using Winchester disc technology. It is oriented to the technical market. The UK staff comprises some 25 people and the turnover is in the region of £1 million per year.

Mator, a British company, has an associate manufacturing company Mator Inc. based in Houston with a factory in Los Angeles. "We had intended to manufacture boards and devices here in the UK," said Pembroke, "but we found that there was too much red tape and aggravation, especially when trying to set up a factory in Brighton. It was too much hard work, especially when we could set up a factory in 48 hours in Los Angeles, with the added advantage of cheaper components."

Altogether eight teenagers have been taken on in two batches, and are from diverse backgrounds. One was formerly a beauty therapist. Pembroke is pleased with all of them.

Mator does not give aptitude tests. "We advertise locally and interview all applicants," said Pembroke.

Workplace is compiled by Philip Hunter.

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08.30 – 09.00 Registration/Coffee

09.00 – 09.30 **Overview – Key Issues for the Independent Software Vendor**
Paul Bailey
* How to Maintain Portability
* Avoiding Software Obsolescence
* Minimising Development Costs

09.30 – 10.00 **The Changing Structure of the Personal Computer**
Howard Kornstein
* Developments in Silicon, Display and Media Technology
* Graphics in the Personal Computer
* The Evolving User Interface

10.00 – 10.30 Coffee

10.30 – 12.00 **Operating Systems Technology**
Tom Rolander
* Issues in Portability
* Survey of Operating Systems for the PC
* Designing for CPM Compatibility
* CPM Plus – High Function/Performance CPM
* Concurrent CPM – Opportunities in Concurrent, Real Time PC Software
* CPM 68K – Bridge from Unix Development

12.00 – 12.30 **Languages for Applications Software**
David Powys-Lybbe
* Issues in Language Choice
* Suitability for Present Applications
* Portability in Machine and Architecture
* Run Time Support Requirements

12.30 – 13.30 Buffet Lunch

13.30 – 14.30 **Languages Survey**
Michael Lehman
* C Basic Family – Professional Business Basic
* Pascal MT +
* 'C'

14.30 – 15.00 Break – Coffee

15.00 – 16.00 **Productivity Tools/ISV Programs**
Chris Lusby Taylor
* Display Manager
* Access Manager
* Digital Research's ISV Support

16.00 – 17.00 **Graphics Interface for Applications Software**
Fred Langhorst
* Machine Independent Graphics
* GSS Kernel
* GSS Plot

17.00 – 17.45 **Venture Capital and Software Marketing**
Tony Diment, Howard Kornstein
* Venture Capital for Software
* Software Marketing and Presentation

18.00 – 19.00 **Cocktails and Hors d'Oeuvres**

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Digital Research, the creators of CP/M, are sponsoring a major Software Forum at which World software authorities will discuss the key issues facing the Independent Software Vendor. If you create software for resale – or are considering doing so – you must not miss the Digital Research Independent Software Vendor Forum. Internationally known software professionals will explain how to broaden your market and increase your sales by exploiting the personal computer revolution.

All of the key issues – machine independence, the latest operating system developments – concurrency – transportable graphics – productivity tools – the marketing and presentation of software products – raising venture capital – will all be covered by experts.

The Forum will be held at the Café Royal on 21st April 1983. If you are in, or considering the business of marketing software for professional personal computers, then this is a day you should not miss.

Digital Research Independent Software Vendor Forum

21st April 1983 Dubarry Room, Café Royal, 68 Regent Street, London, W1. Registration begins 8.30 a.m. for a prompt 9.00 a.m. start.

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Tom Rolander. Vice President and Manager of Operating Systems Division, designed and implemented the Digital Research MP/M and concurrent CP/M operating systems. Before joining Digital Research, he was an OEM Applications Engineering Manager at Intel. Rolander holds a BSE and an MSE in Electrical Engineering and Computer Science from the University of Washington.

Mike Lehmen. Mike Lehman is one of the top figures in the software industry in the USA. He was the author of the industry standard PASCAL/MT compiler. He founded MT Microsystems which, later joined with Digital Research, where Mike has been Director of Software Development and has been instrumental in developing Digital Research's advanced 'C' compiler system.

Fred E Langhorst. Manager of graphics development at Digital Research. As a member of the recently formed Research and Development Group, he is responsible for design and implementation of graphics enhancements for the company's operating systems and compilers and is an active member of several international graphics standard committees. He holds a BSME from General Motors Institute and an MS and PhD from Purdue University.

Howard Kornstein. Howard Kornstein is one of the UK's most noted figures on the microcomputer scene. He was the Technical Manager for Intel Corporation UK and is well known as a speaker on evolving trends in microcomputer systems and architecture. He is now Technical Director, Europe for Digital Research. He is actively involved in many UK professional bodies and is a member of the Editorial Board of the journal Microprocessors and Microsystems. Howard Kornstein obtained his BSc at the University of California and his MSC at the University of Surrey.

Tony Diment. Tony Diment has thirteen years experience in the computing industry, covering office automation, mini systems and software. He spent five years taking an NRDC-backed computer service company from a start up stage into profitability and, after a three year spell as consultant with Logica, he joined the Board of Pergamon Press to diversify the group's computer applications. His specific responsibility at TDC covers investments in the computer industry sector.

Paul Bailey. Director of European Operations, is responsible for the company's three subsidiary operations in UK, Germany and France. He is also responsible for overall European management, including European strategies, for managing the direction of the operating companies and for overall financial performance. He spent nearly ten years at Tektronix managing marketing and engineering for its graphics division in Europe. He also spent seven years with the Ministry of Defence as a design engineer. He holds a BSc (Hons) degree in electronic Engineering.

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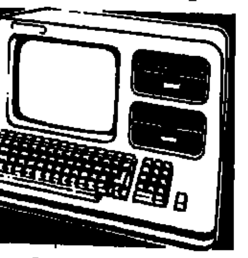

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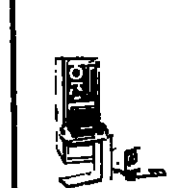

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PEOPLE

■ Systems builder Micro Scope has announced four appointments. **Carolynne Barnett**, formerly Sunderland retail branch manager at Turista Worldwide Travel has joined the company as program supervisor. **Sara Jarman** and **Christine White** have joined as programmers, working on the development of Micro Space systems. Jarman was formerly with Plus 1 Computing and White was previously with Legg's Business Systems. New junior programmer is **Joe Popli**, formerly a partner in import/exporter Rutlwich, before entering computing via a TOPS training course.

■ Package Programs Ltd (PPL) has appointed four consultants for its subsidiary PPL-Cyborg. **Mike Smith** joins from Baric Computing; **Steve Broadbent** was previously with Burroughs Machines; **Sally Mayr** was formerly with ICL and **John McAdam** spent the last two years with City insurance and shipping company Andrew Weir.

■ Two salesmen have joined MBS Microtex. **Brian Ekins** was formerly with NCR and Systime and **David Fooks** is also an ex-NCR salesman.

■ **Chris Ramsdale** has joined Maxstor UK as systems engineer. He was previously corporate MVS support specialist at Desdata Systems.

■ The Information Center (Kuwait) has appointed **Ian James** as its UK business consultant. His first task after setting up the Center's UK subsidiary, Flexidata, is to manage a training project for the Kuwait government. He was previously a consultant with Shell UK.

■ **Derrick Middern** (above) has been appointed computer products sales manager at Sunyo Marubeni (UK). He will be based at Watford. He was previously with Teleprinter Equipment for four years, where he was sales and marketing manager.

■ The Overseas Development Administration is sending two senior systems analyst/programmers to Fiji to work under the UK's technical co-operation programme. **Anne Heads** was previously a programming team leader and systems analyst at Woolworth in Swindon, and **Stephen Smith** leaves his job as a commercial systems manager with a paint company.

■ **Graham Gibson** has been appointed supplies manager by Tycom. He previously worked in production control at ICL and GEC Measurements. **Karl Simpson** is Tycom's new head buyer. He previously worked for Racal, Page Engineering, Hewlett-Packard and Texas Instruments. John Whitmore has been recruited as support engineer responsible for telecommunications and related activities. Previous experience in the telecommunications business has included spells with GTE Ferranti, Decca, and Marconi.

■ Gould SEL Computer Systems has further expanded its field sales force with two new appointments. **John Ransford** has joined the company as a sales executive covering South-west England. He was formerly with Calcomp. **Paul James** has been appointed sales executive for the North-west. He was previously with Hewlett-Packard.

■ **Simon Bryan** (above), currently manager of Dearden Farrow's computer services department, will become a partner in the company from April 9. He joined the firm of chartered accountants in 1980.

■ **Neil Flynn** has joined BOS software house MPSI as sales manager, special accounts. He was previously with Comshare for five years as senior sales executive.

David Harper

■ **David Harper** has joined the board of RTL Software Services, and not RTZ Software Services as stated in last week's issue. Harper joined the company from ICL where he worked for 21 years, latterly in managerial positions with Dataskil.

With the firm belief that "history and high technology are an attractive combination" FBA Computer Services managing director Frank Burger has set up the company's new headquarters at the "Old Mill" in Godalming. The mill dates back to Norman times and is listed in the Doomsday Book. Godalming itself has an historical claim to fame – it was the first English town to be "electrically illuminated". FBA Computer Services' most recent development was the launch of its CIBS integrated business system designed to operate on virtually any computer running under Unix with SMC Basic. Picture shows Frank Burger (left) with FBA's marketing director Ian James.

■ DPCE, the independent computer maintenance company, has made two board appointments. **Harvey Tordoff**, finance director of DPCE UK has been elected financial director of the parent company DPCE (Holdings). **Jan Grieg-Gran**, one of the company's senior engineering managers, has been appointed a director of DPCE UK.

■ Zynar has expanded its marketing operation with the appointment of two sales executives. Arthur Trick, who becomes European sales executive, was previously with USCL Microsystems. **Peter Byrne** joins Zynar from Metrotech.

■ **David Roberts**, formerly marketing manager with RTZ Computer Services, has joined Northern Software as marketing director.

■ Newbury Data is to double the size of its German subsidiary and has appointed **Helarich Schulte** (below) as general manager to head this expansion. Shulte was previously German district manager for Control Data.

DIARY

APRIL 6

Mix and Match – the plug compatible jungle. IDPM Central London branch. Altergo, Imperial House, 15-19 Kingsway, London WC2. 6.00.

Branch AGM and presentation on the social implications of the new technologies. IDPM Sussex branch. Room G27, Mithras House, Brighton Polytechnic, Brighton. 7.00.

APRIL 11

Wine tasting and AGM. IDPM Norfolk branch. Castle Hotel, Castle Meadow, Norwich. 7.30.

Prestel's gateway to the world – a practical demonstration of the latest developments in Prestel by Granada TV Rental. IDPM Scottish branch. Lloyds & Scottish, Orchard Brae, Edinburgh 4. 7.30.

APRIL 12

Visit to air traffic control centre. IDPM West London to Oxford branch. Numbers are limited, so phone Maren Talbot on 01-309 8087 to book. Air Traffic Control Centre, West Drayton. 7.30.

APRIL 13

Robotics. IDPM Birmingham branch. New Imperial Hotel, Temple Street, Birmingham. 7.30.

APRIL 19

The past, present and future of word processing. BCS WP and Office Automation Specialist Group. Prudential Assurance, 142 Holborn Bars, London EC1. 5.30.

CONFERENCES

■ **KEEN Computers** is holding two one-day conferences aimed at the DP manager controlling, implementing or managing a local area network. Speakers will include a number of users talking about why they chose to take the LAN route. Other speakers will look at LAN hardware and software. The sessions aim to be practical and applied. Cost for the day is £45 excluding VAT but including lunch. Venues are Imperial College, London on April 19; and Manchester University on April 21. Further details from Max Hotopf at Keen Computers on 01-236 3325.

■ A FIVE-DAY residential workshop on project management will be presented by Datasolve Education between April 25 and 29. Intended for experienced analysts, it offers practical help on how to get systems projects in on time, within budget, and which meet users' needs. Workshop topics include project planning and control, quality assurance, managing client relations, estimating development effort, cost/benefit analysis and the management of project teams. Fee is £395 + VAT and accommodation costs. Further details from Peter Finch of Datasolve on 01-828 8104.

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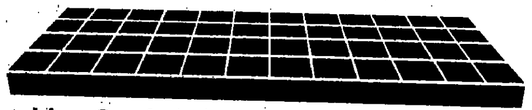

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Experience in Seismic Processing, Image Processing, R.T. Simulation and Large Scale Signal Processing will be an asset.

Extensive training will be provided at our U.S.A. facilities.

A competitive remuneration package (£14-18K) will include equity, private health insurance, flexible pension plan, a two litre car and 20 days' holiday per annum (minimum).

This is a challenging opportunity to join a young, dynamic company in its early phase of growth. For further details, please contact the U.K. Branch Manager.

STAR TECHNOLOGIES, INC.
Cory House, Bracknell, Berks RG12 1ES
0344-54471

(3092)

UNIVERSITY OF EDINBURGH
DIRECTOR OF THE PROGRAM LIBRARY UNIT

The University Court invites applications for the post of Director of the Program Library Unit, which became vacant on the retirement on 30th September, 1982 of Mrs M M Berrill. Applicants should have extensive experience of applications software and of the management of large scale computer-based data libraries. Further particulars of the appointment may be obtained from the undersigned, with whom the applications (ten copies), giving the names and addresses of three referees, should be lodged not later than 30th April, 1983. A candidate from overseas may submit one copy of the application. Please quote reference 3/83.

A M Curtis, Secretary to the University, University of Edinburgh, Old College, South Bridge, Edinburgh EH8 9YL

(3056)

COMPUTER ENGINEERS

We are looking for Computer Engineers to enlarge our technical division in West Germany. Applicants must have a minimum of three years experience with manufacturers such as IBM, Honeywell Bull or Hewlett Packard. High income and company car provided. Aid in finding accommodation assured. Please send written applications to address below, or contact Mr Klaus Heubner by telephone

EDV WARTUNG HEUBNER GMBH
D-7000 STUTTGART 1
BREITSCHEIDSTR 78
WEST GERMANY
Tel: 71/22 13 30

(3084)

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Computer Operators

Bournemouth
£6,500 to £8,300 plus benefits
Remuneration inclusive of Shift Allowance

Benefits include relocation package and mortgage subsidy (where applicable), non-contributory pension, free life assurance, subsidised restaurant, Sports and Social Club and ITT products staff discount shop.

Requirements

Abbey Life have vacancies for Computer Operators with experience of MVS/JES2 (VS1 would be considered). Knowledge of JCL and utilities, ROSCOE or CISC/VS would be an advantage.

The Company operates a 5 day three-shift system, currently under MVS on twin 8 Megabyte IBM 4341 CPUs with ACF/VTAM, CICS/VS and ROSCOE.

Please write or telephone for an application form to: **Val Hastrop or Alison Potter**
S & DP Technical Recruitment
Abbey Life Assurance Company Ltd
80 Holdenhurst Road
Bournemouth BH8 8AL
Tel: Bournemouth (0202) 292373 ext. 4444

Abbey Life

(3093)

CAREER MINDED . . . ?

analyst/programmers to 12K

The face of computing within all sectors of industry is changing. Traditional techniques are rapidly being replaced by new hardware and software disciplines together with a different attitude towards the development and implementation of computer systems. Now, more than ever, it is vital that you have a thorough understanding of commercial business and possess a creative and innovative approach towards system design.
Where better to enhance your professional skills than in a dynamic young systems house hungry for further success.
Our client, having already established a first-class reputation and impressive client base, is committed to future growth. They recognise the role of the individual and realise that success is dependent upon the effort and contribution of talented professionals. They can provide an environment where ambitions can be fulfilled.
The Company's services combine the development of highly marketable software packages with the design of bespoke systems. These together with an investment in a variety of hardware products, will provide a highly profitable and secure future.
To keep pace with what is a very exciting stage of the Company's development, they wish to recruit additional Analyst/Programmers who can demonstrate a sound technical background with the type of personality most suited to a Systems House. Flexibility is a key-word and the selection criteria covers a broad range of skills. Ideally you will already be working in the service sector, however those from a profit orientated user environment should still apply.
You will have a sound COBOL programming background and be able to play a major role in the design of commercial applications. Your most recent experience will be in the development of on-line, interactive systems – and it is essential you fully understand how a company works.
You will be communicative and able to establish and control relationships with all levels of client management. Your ability to grow and realise your full potential is considered the fundamental attribute.
The immediate career prospects are outstanding and after familiarising yourself with the Company, its products and clients, you will be expected to rapidly develop into a full project management role.
Room to grow is as important in a social sense as it is in terms of your career. The Company is based just outside Oxford providing a very attractive rural location. It is in a low-cost housing area and whatever your life-style there exists an excellent range of social amenities.
The starting salary is highly competitive and in addition there is a good benefits package including an Annual Bonus. To find out more about these interesting opportunities and to arrange an immediate appointment for interview contact the Company's consultants on the number below.

Telephone: 01-995-7952 now or 01-373-7417 (evenings or weekends)

Grenville Associates
Unit 1, Longshott Court
76 West Cromwell Road,
SW5.

OUTSTANDING OPPORTUNITIES IN

TECHNICAL SUPPORT

Birmingham — **68000 based systems**

We have been retained by one of the fastest growing super-micro companies to recruit a number of hardware and software specialists for their UK support team. With its HQ based in the USA, this young, dynamic organisation has over achieved during its first year in the UK and has exciting but realistic short-term plans to expand into Europe. The state-of-the-art hardware design, powerful multi-user operating systems, high level languages, responsive support and price-performance edge, add up to a tremendous future. These positions carry the normal benefits associated with a leading computer company.

TECHNICAL SUPPORT CONSULTANT — £10-12K + car
If you possess solid communications hardware knowledge with in-depth technical software experience of UNIX type systems, plus sound appreciation of such languages as PASCAL, FORTRAN, or C, this opening will present a stimulating challenge. Networking and/or Database expertise would be useful.

SOFTWARE SUPPORT SPECIALIST — £8-10K + car
This person must have considerable 'hands on' UNIX experience together with working knowledge of either PASCAL, FORTRAN, C, COBOL, or Assembler. The successful candidate will probably be a well-qualified programmer/analyst currently working in an academic environment but looking to broaden his/her experience with a leading manufacturer.

HARDWARE TECHNICIAN — £8-10K + car
You will be an experienced mini/micro engineer with true management potential. Responsibilities will include servicing selected customers, co-ordinating administration matters, maintenance scheduling, and spares control.
This position will best suit a young, energetic engineer with the necessary ambition and drive to success in a fast moving computer company. Knowledge of relevant systems software would be a distinct advantage.

Please send full CV to:
Vic Chivers
SEARCH DYNAMICS LTD
Edgbaston House
3 Duchess Place
Hagley Road
BIRMINGHAM B16 8NH
Tel: 021-455 7811

Search Dynamics
Manpower Advisers

SENIOR ANALYST/ PROGRAMMER

DOS/ICCF/CICS EXPERIENCE

BAHRAIN — £17,000 p.a. (Tax Free)

The General Organisation for Social Insurance has recently taken delivery of an IBM 4331 computer running under SSX/VSE.

A Senior Analyst/Programmer is required to lead a small team (4/5) Analyst/Programmers in the development of on-line applications using CICS with VSAM files. The Organisation has, during the last two years, developed a large database of information concerning insured workers on the Island. This data is currently being maintained by batch application systems; the delivery of the IBM system will permit on-line access to the database in the first instance. It is planned to move to a database organisation together with on-line data entry, in parallel with the development of further application systems during the coming year.

The successful candidate should be educated to degree level and have an in-depth knowledge of CICS preferably gained in a DOS environment.

Reporting to the Computer Manager the Senior Analyst/Programmer would be expected to both supervise and train an experienced team of Analyst/Programmers in the effective use of CICS software.

An initial 1 year renewable contract would include free accommodation and five weeks' annual holiday together with a contract completion payment.

Applicants should write to the Computer Manager by April 15th in the first instance enclosing details of age, marital status, education, etc together with a brief history of career to date.

General Organisation for Social Insurance
P.O. Box 5319
Bahrain

(3094)

IBM S/38 PROGRAMMER/ANALYST

Who we are:- Boston Trust & Savings – a growing consumer finance company specialising in providing credit, mortgage, savings and insurance services direct to members of the public. We have 25 money centres throughout the United Kingdom, and more are planned.

Who we want:- The Company is about to develop a new computer system on an IBM System 38 to replace an ICL bureau facility. We wish to recruit a Programmer/Analyst to work on the initial project (in the Bank of Boston's London Office), and to take charge of subsequent development at St. Albans where he/she will report directly to the Financial Controller. The successful candidate will be aged about 25, with 3-5 years of RPG II on IBM S/34, or RPG III. A proven track record of successfully completed projects is essential.

What we offer:- This is a permanent position offering a good negotiable salary, and initially 3 weeks annual holiday. Non-contributory pension, life insurance, WPA medical insurance, subsidised loan and mortgage facilities after qualifying period.

Please write or telephone:–
Peter D. Cornfield, Financial Controller,
Boston Trust & Savings Limited, Boston House,
Lower Dagnall Street, St. Albans, Herts AL3 4PG.
Tel: St Albans 32241.

BOSTON (3088)

Support Analyst Programmers

Neg. to £12,000 plus car

We are a fast growing WANG and HONEYWELL Systems and Software House. Our speciality is in commercial applications as part of turnkey systems whilst providing software consultancy skills to a large number of international corporations.

Due to a considerable increase in both our UK and Overseas activities we now require Support Analyst Programmers at a variety of levels up to Project Leader.

If you are highly motivated, willing to accept immediate responsibility and can work happily alone or as part of a team then we could be right for you.

For people familiar with real-time minicomputer systems using WANG BASIC, or HONEYWELL LEVEL 6 COBOL/SCREENWRITE the opportunities are tremendous.

If you can demonstrate these qualities, please send your CV to Stuart R. Allan, Technical Director.

ADS (Computers) Limited
2 The Grove Slough SL1 1QP
Tel. Slough (0753) 75167

(3073)

ADS

ARABIAN DATA SYSTEMS, the leading Saudi Arabian consulting group with their headquarters in Jeddah, have a major contract, which together with the continued expansion of their existing projects has generated the need to fill the following positions with start dates scheduled from now till August.

DATABASE ADMINISTRATOR 30XX — £20,000-£30,000
A minimum of five years working with IBM hardware with at least three years on IMS or ADABAS is essential, ideally in an OS or MVS TP environment. A degree or professional qualification is desirable.

SYSTEMS PROGRAMMERS — £20,000-£30,000
a) 3031/3033 – a minimum of five years' programming experience is essential. The applicant should be capable of supporting MVS/JES2, ACF/VTAM and ACT/NCP.
b) 30XX likely upgrade to 3081 – a minimum of five years' programming experience is essential, with at least three years' OS/VS1 and VM.
c) 43XX – a minimum of five years' programming experience is required. The applicant must be capable of installing and supporting DOS/VSE, DL1 and CICS.

PROGRAMMERS & ANALYST PROGRAMMERS
30XX & 43XX — £16,000-£20,000
A minimum of four years' DP experience is essential with at least two years' working in a CICS, DL1, COBOL environment.

DOCUMENTATION SPECIALIST — £15,000-£18,000
A minimum of five years' DP experience with at least three years' User Documentation in an IBM environment.

OPERATIONS STAFF 30XX, 43XX — £11,000-£20,000
a) SHIFT LEADERS, min. five years' experience, circa £16,000 + shift.
b) SENIOR OPERATORS, min. four years' experience, circa £12,500 + shift.
c) OPERATORS, min. two years' experience, circa £11,000 + shift.

All positions must have MVS/JES2, the senior positions also require ACF/VTAM, NCP, IBM JCL and ideally exposure to FDR & TMS.

ANALYST/PROGRAMMER DG ECLIPSE £15,000-£19,000
For the development of admin systems. A minimum of three years' experience developing COBOL programs ON LINE and experience of AOS 3.4 and INFOS II is essential.

INITIAL INTERVIEWS from 10th APRIL

For further details, please contact Jenny Dalrymple-Hay or Ian Murray-West weekdays (8 am to 10 pm) on 01-493 2947 or weekends respectively Beaconsfield (04946) 4579 or Milton Keynes (0908) 563415.

DALROTH & PARTNERS LTD., 4 HALF MOON STREET, LONDON W1Y 7RA

(3077)

PROGRAMMER/ANALYST

LANSDOWNE HOSPITAL

We are looking for a Team Leader for our Programmers/Analysts in the Management Services Organisation. Approximately five years' experience of computing required, not necessarily within the National Health Service. Experience with RSX II M/Mumps or CPM essential.

Salary £8,367-£10,277

Further details may be obtained from:
Dr. M. Brown, Management Services, Lansdowne Hospital, Cardiff. (0222) 20561.

Application forms available from:
Personnel Department, South Glamorgan Health Authority, 14th Floor, Pearl Assurance Building, Greyfriars Road, Cardiff.

Closing date: 14th April, 1983.

(3103)

South Glamorgan Health Authority

QUEEN MARY COLLEGE
University of London

PROGRAMMING AND APPLICATIONS SUPPORT DISTRIBUTED ARRAY PROCESSOR SUPPORT UNIT

The Unit is part of the QMC Computer Centre providing a national service for users of the DAP. Housed in special purpose-built accommodation, the Unit fosters research on the use of parallel machines, produces software, advises users and acts as a focus of information on parallel machines. A PROGRAMMING CONSULTANT is sought to assist in this work, ideally with at least 2 years experience in scientific/technical computing and interested in helping others solve their problems on a new type computer.

Initial appointment to 31 July 1985, in range £8,375-£9,370 p.a. + £1,168 London Allowance. Application forms and further details available from The Secretary, Queen Mary College, Mile End Road, London, E1 4NS, to be returned by 30 April.

(3028)

CITY OF BIRMINGHAM POLYTECHNIC
COMPUTER CENTRE

SENIOR LECTURER IN SYSTEMS ANALYSIS

The main task, initially, is that of developing a Management Information System for the Polytechnic's administration. Thereafter conventional lecturing duties will follow mainly on Business Computing courses.

LECTURER II/SENIOR LECTURER IN COMPUTING STUDIES

Duties include the development of computer systems, particularly in the area of education and teacher training. The post is tenable for 2 years in the first instance.

LECTURER II IN COMPUTING STUDIES

To lecture on HND, professional and degree courses, mainly for business, and to assist relevant departments in their use of microcomputers.

SALARY SCALE:	SENIOR LECTURER	£10173-£11964 (bar) £12816 p.a.
	LECTURER II	£6855-£11022 p.a.

Further details and application forms (to be returned by 15th April, 1983) from: The Personnel Officer, City of Birmingham Polytechnic, 'F' Block, Perry Barr, Birmingham B42 2SU
Telephone 021 356 9193 ext. 215

(3087)

SALES EXECUTIVE
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SYSTEMS SUPPORT EXECUTIVE
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–WICAT MOTOROLA 68000 SUPERMICRO'S–
–DEC COMPATABLE 11/23 SYSTEMS–

We are interested in interviewing experienced sales professionals with a proven track record in mini computer sales to expand our major account customer base throughout the UK.

Please apply in writing to Edmund Aston

An in-depth knowledge of Unix and D.E.C. Systems is essential to provide pre/post sales support to an expanding user base.

Please apply in writing to John Stinchcombe

Wilkes Computing

Bush House, 72 Prince Street, Bristol BS1 4HU Tel (0272) 277399 Telex 449205

SOFTWARE DEVELOPMENT CO-ORDINATOR
LLANELLI

We are a leading manufacturer of heat exchange components and seat frames in the Automotive industry and now need a person to design, develop and implement software applications for all areas including Manufacturing, Engineering, Finance and Supporting Administrative functions.

A complex and active programme of systems development backed by substantial investment resources is taking place and offers a unique opportunity to introduce original software design and innovative techniques based on a CMC Sequoia 1 Megabyte CPU with 35 on-line VDUs and together with word processing equipment and a variety of micro computer systems.

Applicants should be graduates in Computer Sciences with several years' experience in on-line systems, application software development and data base design with a proven track record of implementing major projects using fourth generation languages.

Salary will be competitive and fringe benefits include a car leasing scheme and relocation expenses where appropriate.

Reply to: **Personnel Dept., Unipart Group Ltd., Llanelli Radiators, Nuffield Works, Felinfoel, LLANELLI, Dyfed SA14 8HU.**

(3090)

TRAINING OPPORTUNITY REQUIRED

Intelligent male in twenties seeks employment as a Trainee Computer Programmer or Trainee Computer Operator using mainframe machine. I have rudimentary knowledge of a small system plus a wide range of banking/accountancy experience. Willing to work for expenses only for trial period. Areas preferred: London, South-East, Midlands.

Replies to Box No. 1291, Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey. (3047)

MICRONET 800

Pioneering national electronic distribution of software to microcomputers, requires a

SOFTWARE MANAGER

who is responsible for the acquisition of software for distribution, its validation and loading, the maintenance of contracts and payment of royalties to software suppliers.

This is a key position within Micronet 800 and the successful candidate must exhibit a high degree of imagination, self-discipline and maturity. Such qualities will be regarded as important as a background in publishing or in micro computer software.

Starting salary negotiable according to experience.

Please write enclosing a full c.v. to: **Database Development Manager, Micronet 800, Bushfield House, Orton Centre, Peterborough PE2 0UW,** to arrive not later than the 14th April, 1983.

(3091)

CHIEF, RESOURCE MANAGEMENT UNIT

The World Bank, a leading international institution in the field of economic development with headquarters in Washington, D.C., invites applications from qualified men and women for the position of Chief, Resource Management Unit, (RMU), in the Information Resource Management Department (IRMD).

Information Resource Management is a concept recently endorsed by the Bank that brings together data processing, office technology, and electronic communications networks. The IRMD is the central organization responsible for planning, policy, consulting, and operation of the Bank's major computer systems.

This position was created to provide centralized staff support to IRMD line management. The primary objective of the RMU is to monitor and evaluate the utilization of departmental resources to ensure an efficient and cost-effective operation in a charge-back environment. The position has both an intra-departmental and Bank-wide focus. Within the IRMD, the RMU Chief must be innovative and creative in the development of many new computer systems, including a billing/accounting system, and various performance evaluation systems. The RMU develops all IRMD intra-departmental policies, procedures, and standards.

Outside the IRMD, the incumbent is required to interact with a variety of Bank staff to audit decentralized computer systems and assess service delivery versus established service levels and develop or coordinate the development of approaches to improve resource performance.

The successful candidate must display a wide range of Managerial and Technical skills in:

i) overseeing the design, implementation, maintenance, and monitoring of various integrated Management accounting and control systems.
ii) authoring policies and operating procedures to support the Department's internal operations and its Bank-wide responsibilities;
iii) providing the Department ongoing services in the areas of budgeting, billing, procurement, and contract administration and general administrative support;
iv) evaluating the obligation and performance of all financial, information processing, and other physical resources managed or monitored by the Department;
v) serving as a source of technical review and assessment capability, both for Departmental Managers and user community, for matters requiring resolution, modification, and development of altenative solutions and ensuring the implementation of the selected option.

MINIMUM REQUIREMENTS

1) Master's degree in Business or Public Administration or its equivalent.
2) Broad and extensive knowledge of financial, administrative, and technical management systems.
3) Experience in establishing and running a charge-back billing system in a complex organization setting.
4) Proven ability to manage in a complex, dynamic, project-oriented business environment, indicating good planning and organizational skills and an understanding for the need for controls, systems maintainance, and monitoring.

The World Bank offers a competitive salary and benefits package. The position is based at the Bank's Headquarters in Washington, D.C. Please send a detailed curriculum vitae, quoting reference No. 3-3-UKG1001 to:

The World Bank
Staffing and Planning Division
1818 H Street, N.W.
Washington, D.C. 20433, U.S.A.

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ANALYST/ PROGRAMMERS

(£9K to 12K)

COMMUNICATIONS AND NETWORKING SOFTWARE

INTERNATIONAL OPPORTUNITIES

LONDON BASED

Aregon has established an international reputation in videotex systems. This success, particularly in transaction processing applications, is leading Aregon into new fields of software development. Analyst/Programmers are invited to take part in Aregon's business expansion and to work on projects which include:

- **Gateways**
- **Message Systems**
- **Advanced Graphics**
- **Terminal Handlers**
- **Teletext/Cabletex Formatters**
- **Integration with Office Automation Products**

Opportunities exist at different levels for people who have skills from among the following: VAX, PDP/11, VMS, RSX, Fortran, Macro, protocol emulation and commercial applications including database products. Analyst/Programmers with some of these skills wishing to expand their experience in a stimulating environment should apply in writing or by telephone to: John Graham, Managing Director, Aregon Products.

AREGON

17 Lincoln's Inn Fields, London WC2A 3EG
Telephone 01-831 7536

(3070)

NEW ZEALAND GOVERNMENT

Computer Services Division
STATE SERVICES COMMISSION

Vacancies currently exist for the positions advertised below in three of the centres operated by the Computer Services Division of the New Zealand State Services Commission. The Division provides computer services and advice for the majority of New Zealand Government Departments and is organised into a Head Office, four computer centres and a number of input centres.

Head Office
– responsible for investigating departmental requirements, undertaking hardware and software evaluation, providing overall plans to co-ordinate and control future EDP requirements and advising Government.

Pipitea Computer Centre (Wellington)
– provides services relating to tax collection, welfare payment and land valuation. The centre is equipped with three Burroughs B3900 systems supporting a nationwide network of six hundred terminals and thirty-eight mini-computers.

Cumberland Computer Centre (Wellington)
– operates an IBM 3081-G using MVS/TSO/IMS/CICS – providing a wide variety of development and processing services to twenty-six Government Departments – Applications development facilities used include Cobol/Mantis/SAS/APL and ADRS-II.

Trentham Computer Centre
– located twenty miles north of Wellington in the city of Upper Hutt. Provides service relating to scientific and statistical work through a series of RJE terminals. The centre is equipped with dual ICL 2980, 13M Bytes and supports a large interactive and transaction processing network using IDMS as a database.

Wanganui Computer Centre
– Wanganui is a pleasantly situated provincial city on the West Coast of the North Island. The centre is equipped with a Univac 1100 3 x 2, and a Univac 1182 which provide services for the law enforcement functions of the Department of Police, Justice and Transport.

Applications are invited for the following positions:

Cumberland Computer Centre

1. Systems Analysts or Senior Programmers (2 positions)
Four or more years' relevant data processing experience including some Cobol programming. (Applicants for senior programmer require experience on IBM mainframes). Salary range between NZ$15,414-NZ$23,761.

2. Systems Programmer or Senior Systems Programmer (1 position)
Two or more years' relevant experience with any of the following: MVS, IMS, OR SNA COMMUNICATIONS PRODUCTS. Salary range between NZ$14,388-NZ$23,761.

3. Senior Data Processing Operator (3 positions)
At least five years' experience specifically MV5/JES2. TSO: IMS/DC: Network Control: IBM Job language. Salary range between NZ$19,394-NZ$20,665.

Pipitea Computer Centre

4. Systems Analyst (2 positions) and Senior Programmers (2 positions)
Five years' practical data processing experience. Salary range between NZ$15,414-NZ$23,761.

Trentham Computer Centre

5. Systems Analysts (2 positions)
Experience and salary as four above.

Assistance will be provided to staff recruited in the United Kingdom to move their family and effects to New Zealand.

For further information and application forms, please contact:

EDP Recruitment (Imm 2/336/12)
c/o Chief Migration Officer, New Zealand High Commission
New Zealand House, Haymarket, LONDON SW1Y 4TQ
(Telephone: 01-930 8422)

Closing date for applications: 13 May, 1983.

(3070)

GSD SOFTWARE HOUSE

Software House seeks **IBM System 34** and **System 36** Programmers/Analyst Programmers to work on challenging new projects in London and surrounding area. Successful applicants with two years' + RPGII or RPGIII will substantially increase their present salaries, their technical knowledge and their career prospects with this established and rapidly expanding company. Ref. A1

INSURANCE IN THE CITY

This company, a major force in the International Insurance Markets, is currently seeking **Analyst/Programmers** and **Systems Designers** to work on their IBM mainframe in the City. Your COBOL or PL1 programming background combined with some experience of Analysis and/or design will command a salary of up to £13,000. Ref. A2

IMS OR CICS? £9,000-£13,500

Our client, based in West London/Middlesex utilizes dual **IBM** mainframes and is seeking to recruit **IMS** or **CICS** Analyst/Programmers for a variety of development projects scheduled for 1983/4.
COBOL, PL/1 and **APL** are all used within the data processing department and a minimum of two years' programming expertise with **IMS** or **CICS** is required in order to enjoy the numerous company benefits offered by our client. Ref. D1

COBOL PROGS & ANALYST/PROGS £7,000-£11,000

The systems development team within this successful London based company is constantly expanding in order to meet demand from its UK subsidiaries. Hence our client is seeking to recruit a number of COBOL professionals keen to progress their career in an **interactive, database** environment.
Candidates should possess a minimum of 18 months' mini or mainframe **COBOL**. You will be given the opportunity to join a friendly team within a challenging environment and learn new techniques. Ref. D2

SENIOR IBM PROGRAMMERS To £13,000

This dynamic Services organisation based on the Bucks/Berks border is seeking to appoint several Senior Programmers offering at least two years' experience in **PL/1, 370/303n COBOL** or **2100 COBOL**. Applicants should possess knowledge of Database and/or TP and be confident to assume responsibility for small projects when required. Self-motivated individuals will enjoy the fast moving environment and be rewarded with high salaries and quick promotion. Ref. K1

YOUR 2nd JOB To £10,000

With at least two years' **COBOL** programming experience, our client can offer applicants an excellent career move into an Analyst/Programmer role at their **IBM 4331 DOS/VSE** installation in **NORTH SURREY**. Good IBM knowledge, experience of VSAM and the ability to liaise competently with users will provide you with the opportunity to join a stimulating DP environment working on Stock and Financial Recording systems.
A good range of benefits also apply. Ref. K2

SYSTEMS ANALYSTS — YOUR NEXT PROJECT

If you can offer at least two years' commercially based systems analysis experience then our client, a very successful financial organisation, could offer you the opportunity to join an on-line, distributed processing system development based upon very powerful minis linked to a mainframe. Career development to the business analyst role exists and a commencing salary of c£10,000 can be expected for this company based in **NORTH SURREY**. Ref. R1

COBOL, CICS & DL/1 To £10,000

Our client, located in the **CITY OF LONDON**, is seeking to recruit **PROGRAMMERS** or **JUNIOR PROGRAMMER/ANALYSTS** to join their CICS DL/1 project environment. The people appointed can look forward to gaining exposure to program design and analysis to provide them with career progression. If you can offer around two years **COBOL** then telephone us now to progress an application. Ref. R2

These are just some of the career opportunities that we are currently assisting our clients to fill. We would be pleased to talk to you regarding these and many other vacancies that we are currently aware of. Telephone one of our consultants to discuss your particular requirement and how DP Selection can help you.

dp SELECTION SERVICES
A member of the DP Support Services Group

7 Swallow Street, London W1R 7HD
"We look forward to hearing from you."

01-434 2042
(24 hour Ansaphone)

(3093)

MANAGEMENT & EXECUTIVE SELECTION
telephone 01-637 9611

ENGINEERS

MES Engineering Division has been recruiting all levels of engineers for the computer industry over the past seven years.

Below are a selection from our current vacancy file:

CUSTOMER ENGINEERS
London/Kent/Surrey **£8-10K + O/T + S/BY + CAR**
Sophisticated systems. On-going product training; excellent career prospects. Applicants will have two years' mainframe/mini/peripherals experience. *(3309)*

FIELD SERVICE
Yorks/Lancs/Midlands from £12K Package + CAR
All levels. Large systems background, e.g. Honeywell, Univac. Major manufacturer, latest technology. *(3310)*

DEC SYSTEMS
UK Wide **to £13K + CAR**
Several opportunities exist throughout the UK to work on DEC systems. A DEC background is of interest but many positions include full product training. *(3311)*

COMPUTER ENGINEERS
Berks/Bucks/Sussex to £10K + O/T + S/BY + CAR
Leading manufacturer requires flexible engineers with good customer skills. Leading-edge technology, substantial benefits. *(3312)*

For further details contact Chris Bond on 01-637 9611

Suite 201/6 Albany House, 324 Regent Street London W1. **MANAGEMENT & EXECUTIVE SELECTION**

(3309)

Dan Lampert

Computer Operator
Saudi Arabia

My client is seeking a Computer Operator who can design data for use in collecting information on manpower within the Petromin organisation. Familiarity with Apple II computer would be an advantage. You should be a graduate or with an equivalent qualification and have a few years experience. Preference would be given to a candidate with fluent Arabic.

The minimum salary being offered is

$35,000 (US) pa tax free

with free single or married accommodation, good leave and many other company benefits.

Write immediately and in complete confidence to:
Dan Lampert, BSc (Eng) FICE, FIMechE,
Personnel Consultant,
Double L Consultants Limited,
Suite 1, Harcourt House,
19a Cavendish Square,
London W1M 9AD
Telephone: 01-629 2743

(3072)

SYSTEMS ANALYSTS
£9604-£10,071 p.a.

Applications are invited from people experienced in systems work. There are three posts to be filled.
Applicants should have at least three years relevant experience and should be able to demonstrate a record of successfully completed projects. A degree or professional qualification would be an advantage.
Successful candidates will be involved in new applications development work whilst maintaining and modifying existing systems.
The Council owns a Honeywell Level 66 DPS 100 computer with associated terminal network and a large number of distributed minis and micros.

A Union Membership Agreement is in operation.

Application forms from the Directorate Personnel Officer, Directorate of Finance, Britannia House, Hall Ings, Bradford, BD1 1HX or telephone Bradford 729677 ext. 7704. Ref. P280/CW

City of Bradford Metropolitan Council

We are an equal opportunities employer and welcome applications from candidates of any age, sex, race or disability unless otherwise stated.

(3095)

Regional Computing Services Officer
Scale 27 £12,958-£16,524 p.a.

Health Authorities in the Oxford Region (covering Oxfordshire, Buckinghamshire, Berkshire and Northamptonshire) are engaged upon the implementation of an advanced computing strategy in contract with ICL.
The Oxford Regional Health Authority provides computing facilities for hospitals and other health care services throughout the Region and has on site a Regional Computer Unit providing a bureau service covering a wide variety of applications including accounting and other health service systems as well as an advisory service to many functions.
The officer appointed will report directly to the Regional Administrator, advise the Regional Team of Officers and the Regional Computer Policy Committee on computer policies and plans and co-ordinate and develop computing activities within the Region. He/she will have had senior experience in the computing field, demonstrate a high level of management ability and ideally, will possess a degree and/or suitable professional qualification. Experience or knowledge of health service computing would be an advantage.
Candidates wanting to discuss the post informally should ring the Regional Administrator, Mr. P.M. Cooke on Oxford (0865) 64861 Ext 208.
Further details and an application form available (quoting Ref. No. V30/83) from:-
The Recruitment Officer,
Oxford Regional Health Authority,
Old Road,
Headington,
Oxford OX3 7LF
Telephone No. (0865) 64861 Ext. 246/228
Closing date: 15th April, 1983.

(3084)

Oxford Regional Health Authority

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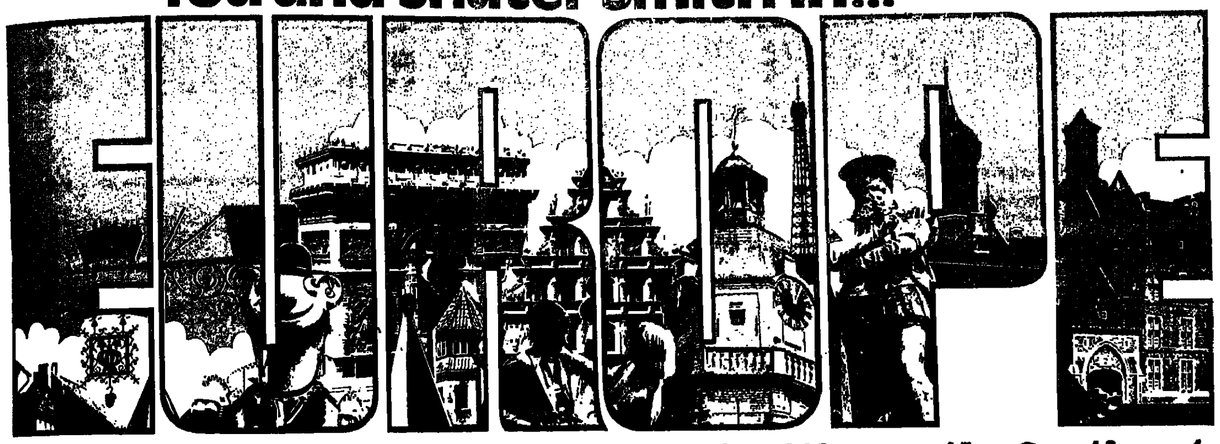

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To join a team engaged on the development of European Sales/Marketing/Distribution Systems. Skills should include PL/1, CICS and either TOTAL, DL/1 or IDMS. CW/E/19

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A highly proficient technician is required with an in-depth knowledge of Prime internals and performance planning/tuning. Candidates should be capable of setting up I/O on Prime and have had exposure to comms. pref. Prime net.

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To undertake a significant Project for a major company. Previous exp. within a production environment coupled to a knowledge of COPICS is essential. Broad commercial awareness and proficiency in the Dutch language important.

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Fortran Programming knowledge and previous experience within the Steel/Heavy engineering/or process control industries. Start June/July '83.

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Holland
With Cobol and Dutch language ability. Immediate start.

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SYSTEMS DESIGN CONTRACTS HOLLAND

Our client is engaged in major office automation development and is seeking 5 proven Systems Designers to play a key role in this important programme.

PROJECT LEADER/SYSTEMS DESIGNER
Start early May – 1 year+ contract
Project – The project leader will co-ordinate the activities of a small team engaged in equipping a business computer based on the Motorola 68000MP within a new Office Control [illegible] skills and knowledge of UNIX (5 or 5) or VNOS, compilers, Cobol, Motorola, 68000MP. Ref CW/E/9

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Exceptional tax free salary plus superb range of benefits.
A prestige financial organisation with its international headquarters in Brussels is seeking a highly-skilled professional to take on a challenging and demanding technical advisory role. The successful candidate will enjoy senior level responsibility and will be given every opportunity to influence future dp strategy. Key areas of experience should include DOS/VS, MVS, CICS, DSL, VSAM and databases. This is an exceptional opening for an ambitious person to develop a career in a European environment. Ref CW/E/13

CONSULTANTS
A highly respected systems consultancy with a well-developed client base, is seeking professionals with a background in either process control, petro-chems., or graphics to provide high-level expertise to major organisations within Holland. Candidates will enjoy working in a problem-solving and advisory capacity and should be able to combine proven hardware/software expertise with strong communication skills. An ability to speak Dutch is not essential. An attractive package is offered including full relocation and co. car. Ref CW/E/14

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West Germany – U.K. based
A leading international consultancy with an impressive record of growth requires a German speaking professional to spearhead and develop a major initiative in W. Germany. Candidates should possess marketing and project management skills together with experience of real time systems and communications, minis/mainframes particularly IBM/Nixdorf or Siemens. Ref CW/E/15

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A dynamic organisation with a highly successful range of information Technology products is seeking specialists with the following: DOS/VSE and/or VM, CICS, ASSEMBLER together with Systems Prog. and client support skills. Situated in one of Europe's most beautiful areas they are able to offer both technical challenge, genuine career progression and a package which includes full re-location and 6 weeks' holiday. German language ability, whilst useful, is not essential. Ref CW/E/16

HONEYWELL ANALYST/PROGRAMMER
Belgium
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CLIENT ENQUIRIES WELCOME

If you have a genuine motivation to take up the overseas challenge, call me, Rey Parker, without delay on either 01-491 4653 or contact me any evening over Easter weekend between 6-8pm on 01-660 7655. Alternatively, please forward your curriculum vitae. Initial telephone interviews can be arranged for those currently working abroad. (3089)

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Telex 268312 Wescom G/Atten Shu Smith.

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You are a sales professional who has enough energy to spend 50%+ of his time overseas and still generate enthusiasm in others.

Reporting directly to the M.D. you will receive a high base salary and commission on all sales of FCS-EPS on the System 34's and 38's worldwide. You could also enjoy the substantial tax benefits which acrue from working outside the U.K.

Our client is a U.K. company which specializes in the design, development and implementation of systems for the IBM System/34 and /38 marketplace. Its Business System/34 and Business System/38 comprise the most comprehensive range of program products available.

In accordance with this philosophy of excellence, the company has developed, and has world-wide rights to market that version of FCS-EPS which runs on the IBM System/34 and System/38 range of computers.

We are looking for a young successful and ambitious Salesman, with experience selling financial planning and modelling systems. His role will be to stimulate sales of FCS-EPS on the IBM System/34 and System/38 range through the existing network of EPS sales offices in the U.K., Continental Europe, USA, Canada, Far East, Middle East and Australasia.

The company is young, successful, growing rapidly and in a position to offer long-term career opportunities. With a product which is one of the most respected and widely used business planning and modelling systems in the world, selling into a market of 100,000 installed System/34 and System/38's which is increasing daily; this must represent one of the most attractive sales opportunities available.

For further details phone Kevin McCourt or write enclosing full C.V. Interviews will be held in Reading and Central London.

MCL

McCOURT COUSINS LTD, 27-29 Greyfriars Road, Reading, Berkshire. (3067)

Tel: Reading (0734) 595346

WANTED

- PROJECT LEADER
- SENIOR ANALYST/PROGRAMMERS
- ANALYST/PROGRAMMERS
- SENIOR PROGRAMMERS
- PROGRAMMER

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Not only is Nestlé a large and successful company, but it also offers that rare commodity – A FRIENDLY WORKING ENVIRONMENT. Excellent competitive salaries and a great benefit package including flexi-time, over 4 weeks holiday a year, a subsidised restaurant, and contributory pension scheme.

Nestlé One of the world's major food manufacturers pursue an active policy of computerisation throughout their organisation and due to recent expansion now require further staff for their Croydon Head Office.

PROJECT LEADER
The successful candidate will be responsible for investigations into both manual and computerised systems and their subsequent development or enhancements. It is envisaged that he/she will have between 7 and 10 years data processing experience and will have a sound knowledge of COBOL, CICS, and DL/1. Experience of managing a programming or analysis team is desirable.

ANALYST/PROGRAMMERS
This will give individuals with 3/4 years COBOL experience the opportunity to develop their technical skills with a COBOL, CICS, DL/1 development team. CICS and DL/1 experience is preferred but not essential.

SENIOR PROGRAMMERS
You will be responsible for the maintenance of various systems and will have a sound knowledge of both COBOL and ASSEMBLER.

SENIOR ANALYST/PROGRAMMERS
You will have 3 years programming and 3 years analysis experience together with a sound knowledge of COBOL, CICS, and DL/1. In addition you will have been involved in projects from the initial conception through to implementation.

PROGRAMMER
With not less than two years COBOL experience in an IBM environment you will be involved in the maintenance of various systems.

(3060)

TLP

For further details and an application form, please contact:

Nic Poland
TLP
Leon House, High Street, CROYDON,
Surrey CR9 3NH TEL: 01-686 5656

EUROPE
to £21,500 p.a.

IBM
Senior Analyst/Programmer
Analyst/Programmer
Programmers

Our client is currently seeking a team of IBM experienced Analyst/Programmers and Programmers to support a long term information retriever project on the continent.

Senior Analyst/Programmer

Working in the Software division you will be responsible for managing a team of four people whose objectives are: The creation of software to support existing and new Databases, improvement of existing files, support services and the generation of accounting and statistical programs. The successful candidate should have a degree in computer information science, at least six years' programming to include IBM JCL, Assembler, COBOL and PL1. Familiarity with retrieval techniques, Database and Text processing, have proven man/management skills. DLM13/1

Programmer/Analyst

Reporting to the Senior Programmer/Analyst you should have a degree plus at least five years' programming experience and the ability to program in IBM JCL, Assembler, COBOL, PL1 and be familiar with retrieval techniques, Text processing and Database operations. DLM13/2

Programmers

Reporting to the Senior Programmer/Analyst you should have HNC or equivalent in computer studies subject, several years' programming experienced gained in large Database operations and the ability to program in several of the following: IBM, JCL, Assembler, COBOL, PL1. DLM13/3

Senior Technical Writer
Technical Writer

These are continental based appointments for successful candidates whose principal responsibilities will be Technical Text Processing, Information Processing, File Maintenance and Improvements, Component cataloguing and preparation of Hand Books and associated documents. The Senior Technical Writer should be qualified to HNC level in Electronic or electrical engineering, have at least three years in Electrical components and circuits and the production of technical documents. Finally a knowledge of a European language would be advantageous. DLM13/4

Technical Writer

The purpose of this position is to assist the work of the Senior Technical Writer and candidates should have compatible experience to the above position. DLM13/5

DATAMATICS
RECRUITMENT SERVICES
01-399 9183
Datamatics, Freepost, Surbiton, Surrey KT6 5BR (3066)

MANAGEMENT & EXECUTIVE SELECTION

telephone 01-637 9611

CICS

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£8-11.5K

Our client based in **Surrey** is looking for two Junior Systems Programmers with 18 months' CICS and Assembler experience.

You will be part of a young, newly-formed team specialising in communications using the latest technology.

The work will involve the evaluation, development and installation of the latest communication facilities, including CICS networks and distributed data processing, 8100s.

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Alternatively write with full career details to Personnel Department, Systime Ltd., Millshaw Park, Leeds LS11 0LT.

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A highly successful international corporation, leading specialists in their field, seek a large number of contractors to extend a variety of R and D Projects and continue breaking new ground.

1) Programmers: **X5 M68000 PASCAL/C/ADA** (will consider similar machine/language).
2) Software Engineer: with **RMS** and **BIOS** Realtime operating SYSTEMS experience and **MOTOROLA ASSEMBLER.**
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4) Software/Hardware Engineers × 3, 2 × Software Engineers with an empathy for **HARDWARE**, 1 × Hardware Engineer with an empathy for **SOFTWARE** to join in a team for testing, debugging, etc. – through to production. Must have **M6805 + ASSEMBLER** experience.
5) Test Software Engineers × 2, with **M6805 PASCAL/ASSEMBLER** experience on monitors, etc. producing test Software for **COMPLEX 68K/6809 CPU SYSTEM.**

All contracts: West of London
3/9 months extendable
Very competitive rates
Immediate start
Up to 4 weeks' notice acceptable.

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ICL
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There are many exciting possibilities available in both telecommunications projects at the prestigious Bell Labs and commercial applications at work in the finance, manufacturing and insurance industries. Telephone communications opportunities involve work with diagnostic systems, digital voice, message switching, networking, and CAD. Large scale commercial work includes database, CPU-CPU communications and support.
If you have at least two years' experience in either Unix and C or PL/1 IMS or Assembler/IMS, come talk to us. We'll tell you more details about the challenge and excitement of living and working in the U.S.A. We will also be happy to discuss opportunities for post-graduate students and professors.
Call our London office today to arrange an appointment at one of these locations. Early morning or evening times can be arranged to accommodate your work schedule.

BRISTOL	12-13 April	Unicorn Hotel
MANCHESTER	14-16 April	Portland Hotel
GLASGOW	18-20 April	Albany Hotel
NEWCASTLE	21-23 April	Crest Hotel

For those in the South, we will be in our London office on Monday, April 11th, and will return on April 24th.

Call or write to: Donna Fox, AGS Computers Inc., Suite 404, Asphalte House, Palace Street, London SW1. Telephone: 01-828 4377. (3064)

URGENT CONTRACTS!

IBM 8100 DPPX COBOL 6 months+

ANALYSTS – five yrs'. + exp. IBM background.
Ideally worked in a structured environment 6 months+

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For further information regarding these and other requirements, telephone David Butcher or Gary Edelman on

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SYSTEMS SUPPORT SERVICES LTD

(3101)

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NORTH LONDON — **DEC PDP RSX 11M** — **c £10,000**

Our Client, a company with an enviable growth record within the wholesale/retail industry wishes to recruit an experienced programmer. They are an established computer user and have a variety of applications running on their PDP 11/34 and twin PDP 11/24s, with major developments planned for the future.

Applicants will ideally have a sound DP background to include at least two years' MACRO 11 applications programming gained in an RSX11 environment. Any exposure to Data Communications or Micros would be an added advantage. The successful candidate will be working closely with user departments and should therefore be able to communicate at all levels.

If you are stifled within your present position and would enjoy effective decision making this post will provide a real challenge. For further information on this ground floor opportunity within a small friendly team call CARL SMITH at APEX.

Apex Computer Recruitment Ltd. (3078)
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Apex

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Tel: 01-404 4821.

Brussels Office:
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IMS

Working within a small group providing a consultancy service on the implementation of data base systems, you will be the expert on IMS internals.
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MANAGEMENT & EXECUTIVE SELECTION

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your appointments register

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Nationwide — **£16,000 package**
To sell computer related equipment/electronics to industry, banks and scientific research establishments. Experience of micro processor base equipment or data communications particularly useful.

SW London — **£13,000+**
Selling technical software and engineering consultancy services.

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Benefits include generous Salary, Free Housing, Car Allowance, Free Medical, 30 days' paid leave.
Experience of "TOTAL" DATABASE would be an advantage but not essential.
Send résumé including salary history to:
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INTERNATIONAL COMMERCIAL CENTRE
P.O. Box 5698
Jeddah, Saudi Arabia (3096)

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Leeds based. **circa. £8,500**

Applications Systems Development has a role of paramount importance to play in maintaining ICL's position as Europe's leading computer company.
We're looking for an experienced Analyst/Programmer to join a small project team and become deeply involved in the support and development of SOSCIS (Social Services Client Information System) – a software package for an on-line system designed to help local authorities in the administration of local services. This system is based on 2900 series and ME29 utilising IDMS, COBOL, VME and TME.
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This appointment, which holds excellent prospects for the future, carries a benefits package of the kind you might expect from a company of ICL's stature.
For further details, in the first instance phone Clive Owens TODAY on Reading (0734) 583696. Alternatively you can write to him at 118/128 London Street, Reading, Berks RG1 4SU. (Interviews will be conducted in Leeds).

ICL International Computers

(3080)

your appointments register

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NCR/IBM/COBOL to £14K
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Commercial H. Counties · Midlands · Manchester

HEWLETT PACKARD to £9K
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HONEYWELL to £12K
Systems Programming experience Middlesex

DEC/HP/WANG/DG to £12K
Basic · Cobol Berks · Surrey

IBM/RPG2 to £12K
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IBM to £16K
System exp. Essex

ICL/VMEB or K to £11K
Financial Surrey

IBM/UNIVAC/COBOL to £12K
On-line/Database Surrey

NCR 8200 to £14K
Financial SW LONDON

Analyst/Progs

BURROUGHS/COBOL to £14K
Commercial Surrey

IBM 34/38 to £15K
London/Home Counties/North

IBM/UNIVAC/ASSEMBLER to £12K
On-line/Database Surrey

IBM/COBOL to £10K
Scotland

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Systems/Peripherals Based N. England

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ENGINEERS to £15K
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IBM/ICL to £12K
Stock Control/Commodity Control London

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Real time · Modelling Man · Essex · South West

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IBM to £15K
Insurance/Financial W. Sussex

ICL/ME29 to £16K
Commercial Design Berks.

IBM/ICL to £12K
On-Line Croydon

Software Engineers

CORAL/PASCAL/MASCOT/C to £13K
Communications Glos/Herts/Sussex/Midlands/Manchester

FORTRAN to £12K
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PROCESS CONTROL/INDUSTRIAL AUTOMATION to £13K
Real Time/Petro Chemical Industries Yorkshire

HP3000/INTEL to £12K
CAD/CAM/ATE Home Counties

TERMINAL EMULATORS to £15K
C/Assembler London

Snr Appointments

PROJECT LEADER to £15K
Military Systems Berks/Hants

SALES EXECUTIVES to £25K
Micros · Minis Peripherals, etc Nationwide

CONSULTANT to £15K
Military/Defence Berks

SENIOR CONSULTANT to £13K
Accountancy qualifications Berkshire

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Further details and application forms available from:

Personnel Section
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Mansfield
Notts.

Tel: Mansfield 34171 ext. 55

Closing date 6th April, 1983

(3013)

N. STAFFORDSHIRE POLYTECHNIC
Faculty of Computing, Humanities and Education
Computing Services Unit

DEPUTY HEAD OF COMPUTING SERVICES (PRINCIPAL LECTURER)

Salary Scale £11,331-£13,290 (bar)-£15,018 p.a.

Duties of this post will include the day to day management of Computing Services at the Stoke group of the Polytechnic sites and assistance with Computing Services administration. The Deputy Head will also undertake teaching and tutorial work on computer management and related topics.

Application form and further details may be obtained from the Personnel Officer, North Staffordshire Polytechnic, College Road, Stoke-on-Trent ST4 2DE. Telephone (0782) 45531 ext 297.

Closing date for completed applications 11th April 1983.

(3021)

UMIST

RESEARCH ASSISTANTS

Applications are invited from computer scientists with a theoretical bias or mathematicians with programming experience for two Research Assistants to work on the SERC funded project "Software Tools for the Construction of Verified Software". The persons appointed will develop an implementation of the algebraic specification language OBJ and an associated proof checker. Implementation will be in Pascal on the groups Perq/Unix/Cambridge Ring computer systems. Knowledge of one or more of the following areas would be an advantage: program verification/specification, algebra, functional programming, logic, system software. The appointments will be for three years.

Salaries will be according to age and experience in the range £5680-£11108 per annum.

Further information can be obtained from Robin Gellimore (ext. 2396) or Derek Coleman (ext. 2341) on 061-236 3311, to whom applications should be sent as soon as possible. Please quote reference COM/32/BC.

(3034)

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Further particulars from College Secretary, Queen Elizabeth College, Campden Hill Road, Kensington, London W8 7AH.

(2868)

BOX NUMBERS

Box number replies should be addressed to:

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c/o Computer Weekly
Quadrant House
The Quadrant
Sutton, Surrey SM2 5AS

ANALYST PROGRAMMERS (CROYDON)

We have several positions in the Computer Services Division based at our Head Office in Croydon. You will be working in a small team on various projects based on our twin Systime 8700 (PDP-11) installation.

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An attractive income package commensurate with qualifications and experience is offered together with such benefits as a non-contributory pension scheme and flexible working hours.

For further details and an application form please telephone or write to Mr. D. Carlyle, Head of Computer Services, R.A.C. House, Lansdowne Road, Croydon.

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(3112)

West Country

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Tarmac International

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If you consider yourself to be a good-lead programmer, capable of becoming a project leader within one year, have at least 3 to 4 years' COBOL experience (MVS or DOS/VSE if on IBM), and would like to be in the £10K-£12K bracket now, send a résumé to the Box Number below. We are a rapidly expanding, medium sized, international software house/bureau operation, based in S.W. London, looking for quality staff to grow with us.

BOX NO. 1252

(3057)

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PROGRAMMING to £11,500

Become involved in the development of a comprehensive new international banking system. Our clients offer unrivalled opportunities for bright, young Programmers with COBOL, DOS/VSE, CICS and/or DL/1 experience.

BANKING

ANALYST PROGRAMMER to £12,000

Demanding on your experience, particularly on DEC-based BANKING systems, our client, an International City Bank, require your services. Programmers, who can demonstrate an understanding of BANKING or FINANCIAL applications with at least two years' experience, and the ability to encounter and learn new systems, should apply immediately. A comprehensive BENEFITS package and a pleasant work environment are just some of the points to consider.

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RPG PROGS./ANALYSTS to £13,000

This prestigious financial organisation require several people with a minimum of 18 months' RPG II experience. Preferably you would have gained this in a banking environment together with some exposure to analytical duties. Normal banking benefits apply after three months' qualifying period.

MAJOR OIL COMPANY

SENIOR ANALYST to £13,500

This company, the leader in its field, require an Analyst with proven supervisory skills, to lead a professional team working on On-Line COBOL and Database projects. Emphasis will be placed on analytical and user liaison skills with every opportunity for further advancement.

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INTERNATIONAL SOFTWARE HOUSE

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Our clients will train you in Consultancy techniques if you have 18 months' PL/1 experience coupled with an On-Line and Database background. You should be willing to work abroad, and ready to learn new programming methods, as training is always given.

ELECTRONICS

COBOL, BASIC+, +2 c. £9,500

A vacancy has arisen within a manufacturing firm for PROGRAMMERS or ANALYST PROGRAMMERS with a minimum of 18 months' experience. Knowledge of RSTS/E or VMS on VAX is desirable but just as important is the candidates' attitude towards RESPONSIBILITY as the post requires self-motivated and articulate individuals capable of dealing with USERS and able to work under a minimum of supervision.

LIFE ASSURANCE

PROGRAMMING & ANALYSIS to £13,000

This company, heavily committed to effective information processing and due to continual development, require further staff. IBM COBOL and On-Line experience, particularly if allied to team leadership, would be especially appropriate.

MANUFACTURING

SENIOR PROGRAMMERS to £10,000

Programmers of Analyst Programmers wishing to capitalise on a Solid COBOL background in a COMMERCIAL environment will find their skills rewarded in this well-known KENT-based company. Working both with ICL and HP hardware, this could be the next CAREER MOVE for candidates who feel their skills and talents are unrecognised in their present posts. There is plenty of room for expansion within this company.

INDUSTRIAL

PROJECT RESPONSIBILITY c. £11,000

Our clients are looking for Analysts with a flexible approach and three years' Analysis experience with On-Line/Database in an IBM environment. Effective communicators are needed for the development of Financial and Marketing Systems.

CONSTRUCTION

ANALYST PROGRAMMERS £ Neg.

ICL ME29 experience is a must. Our client is a well-known company currently seeking COBOL Analyst Programmers. They require mature and responsible individuals willing to undertake development work within a small group. You will need to demonstrate a good applications range and a minimum of three years' experience. A good BENEFITS package is offered in addition to a negotiable salary.

MIDLANDS

SOFTWARE HOUSE

PROGRAMMER/ANALYST c. £9,000

A Programmer/Analyst is required with good DEC PDP 11 experience, probably using BASIC+ with the RSTS/E operating system. Experience in a software house, or project management in a manufacturing environment would be considered ideal

MANUFACTURING SYSTEMS

ANALYST/PROGRAMMER c. £9,000

BASIC experience on any type of minicomputer is required by this thriving Systems house. Experience of writing bespoke packages, or in the manufacturing environment would be most suitable.

CONSULTANCY

GSD SYSTEMS £ Neg.

Do you have Programming or Analysis experience using RPG on a System 34, or 38, and wish to move into a consultancy role? Our clients offer the opportunity to obtain experience of the new IBM GSD machine, when it is released.

MAJOR INDUSTRIAL

ANALYST c. £9,000

If you are an experienced Analyst, with some programming ability, here is your opportunity to join a new division of an International Manufacturing Company. Our clients are looking for a key member of an exciting new project and can offer excellent scope for development.

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(3079)

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London, Birmingham, Nottingham

Microserve, is the nationwide customer service division of the Comart Group of Companies. Our service facilities cover contract maintenance, on-site installations and work shop repairs across a wide range of machines and peripherals. These include the CCTA-approved Comart Communicator, Cromemco and the IBM Personal Computer.

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Birmingham Nottingham
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These 2 new service positions in our Birmingham and Nottingham service centres offer excellent career development potential. As an experienced service engineer with at least three years' experience you will be expected to handle a wide variety of microcomputer service work.

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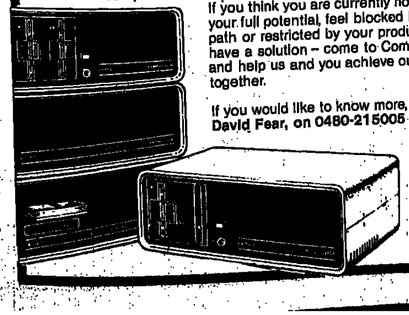

For further written details and an application form on all the above vacancies, contact:

June Hamilton,
Comart Group Personnel Office,
Comart Limited, Little End Road,
Eaton Socon, Cambs PE19 3JG.

comart

A Commitment to Leadership in Microcomputer Development, Application and Support

TEXACO

Texaco has recently identified [illegible] further D.P. professionals [illegible] projects within the area of Systems Development. The computer centre currently has [illegible] IBM 4341 mainframes, one of which is entirely dedicated to a large [illegible] Entry System, the other being a general purpose machine.

The general purpose machine runs under VM with DOS/VSE and CMS. Systems currently being developed utilise CICS and DL/1.

In addition, the department is on-line to the Texaco Europe Computer Centre in Hamburg, giving access to an IBM 3033, running under MVS with IMS DB/DC.

Knightsbridge, SW1

Analyst/Senior Analysts to £13,500

You should be familiar with all phases of project development, as your responsibilities will include involvement from feasibility through to implementation. During the early stages of development you will work closely with project managers from user departments, and subsequently you will assume full responsibility for taking a project through to implementation.

It is envisaged that you will have spent a minimum of 4 years in D.P., and that you will have had a programming background. In addition to this you should have some supervisory experience, and will ideally be conversant with the development approaches in use at Texaco, namely: PROMPT, Yourdon Structured Analysis, LBMS Data Analysis and Jackson Structured Techniques.

Senior Programmer to £10,500

You should have a strong COBOL programming background, gained within an IBM environment, with experience of CICS and DL/1. (Jackson Structured Programming would be useful). This demanding position will involve the estimation of development timescales, the provision of assistance to other programmers, progress reporting and co-ordinating the development effort, so experience in any of the former will be a distinct advantage.

Having spent at least 3 years within D.P., you will already be fully able to take a leading role in system testing, acceptance testing, parallel running and production handover. Furthermore, you will have the flair and dedication to assume the responsibilities of leadership and be responsible for any specific part of a given system.

Programmers to £8,500

Again, an IBM COBOL background is essential, with past exposure to CICS, DL/1 and JSP an advantage. You will be required to work as part of a project team, developing file structures, program structures, program code and test plans.

You will have spent at least 18 months within a relevant environment, and will have the determination and ability to progress to a position of responsibility.

In addition to the competitive salaries, Texaco offers benefits as associated with any large organisation.
For more information and an immediate interview, telephone Andrew Beacham (quoting reference number 0080), on **01-734 7394**, or on **01-223 8507** evenings and weekends.

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The company's next phase of expansion calls for the recruitment of experienced sales executives who have a substantial record of success in selling computer systems to industrial and commercial end-users or systems houses in any of the following regions:

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NORTHERN ENGLAND–SCOTLAND

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Our consultants for this assignment are Alasdair Scott (London and South) — 01-734 9776; and Roger Dodd (Midlands and North) — 05432 56612. Please quote reference SSB/033. (3081)

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SALES BIT

Quality of Management – 46

The benefits of word of mouth recruitment

LAST week I write about the disciplines and considerations of generating new recruits by the use of self-created and administered advertising. This week I would like to deal with the much neglected process of recruitment by personal recommendation.

Some companies occasionally put out a memorandum to the salesforce offering a bonus to those who can introduce new recruits who ultimately join the selling operation. More often than not such exercises result in failure because the idea is not circulated with sufficient enthusiasm or on a sufficiently broad basis.

Salespeople are not the only people who meet salespeople. It is just as likely that a secretary, an engineer, a manager or a clerk will have social or business contacts with people from the selling profession, so why should they be excluded from the search?

Of course, this is not the limitation of possible word-of-mouth recruitment with one's own company. What about the company notice board? This is a continual source of interest and curiosity for even the most cynical employee.

> People like to know who got sacked this week

People like to know who got sacked this week! They also like to hear about promotions, new product announcements, how the football team did last weekend, and the details of the cracked up moped being sold — most reluctantly — by the tea-lady's assistant.

It is compulsive and necessary reading for everyone at some point in the week. So, why not tell everyone they can earn a few quid by doing some salesman a favour? Who knows, they could even buy a moped with the proceeds.

The same goes for the house magazine, assuming you have one. Maybe this also goes out to the company's clients. These are possibly the best word-of-mouth contacts. After all, even those from direct competition.

If they are satisfied clients then, as with playing the part of reference users to prospective clients, they will feel well disposed not only to recommending salespeople to your company, but also providing them with reasons for joining, which after all are ostensibly the same reasons why they bought your product.

However, such activity should not be limited to the columns of house magazines and circulars. It is far more effective to ask the entire salesforce to make the situation known to every client contacted within a given time-frame.

You will be surprised how fast the word [illegible]. Your clients are [illegible] more percep[illegible] imagine wh[illegible] sorting [illegible] good salesman from the bad.

There is al[illegible] the [illegible]ity of givin[illegible] other salesm[illegible] course of th[illegible] Day-to-day [illegible] usually brin[illegible] in contac[illegible] salespeople, [illegible] competitors, who could well have the kind of experience the company is seeking. There is no harm in finding out whenever the opportunity of such conversation occurs.

This kind of imprecise recruitment will never satisfy a major manpower requirement, but it can be an effective form of low-profile recruitment which can compensate for the continuing attrition that inevitably occurs within most sales organisations as the months go by. It also has some significant benefits.

First and foremost, it is cheap. A bonus of two or three hundred pounds is significantly less than one would expect to pay a recruitment agency, but would be most satisfactory to a sponsoring employee.

Secondly, it can usually be taken for granted that such candidates will be of a reasonable calibre because the sponsor will be unlikely to tarnish his own reputation by introducing someone who is inadequate.

Thirdly, such candidates are likely to have a good understanding of the job and the company as a result of prior conversation with the sponsor. This means the candidate is coming into the situation "with his eyes open" which is likely to lead to a more meaningful and less time-consuming interview. Whether the prospect of a successful appointment is considered by the sponsor to be a potential source of reflected glory or possible competition, must needs be the subject of speculation.

Having said all of that, this approach can only be successful if employees and clients alike are happy. No one wants to draw even an acquaintance into an unsatisfactory company or product situation. The sponsor is likely to feel much more responsible for considering the potential candidate's personal and domestic circumstances than a company ever could.

Conversely, everyone wants to work for a happy and successful company, and if that is you, go out and tell the world. If it is not, maybe you should be reading someone else's notice board — particularly if you need a moped.

Alan Williams

CROSSWORD

Solution to Prize Crossword No. 38

P	A	L	L	M	A	L	L	■	P	A	T	H	O	S
I	■	A	■	A	■	I	■	■	■	R	■	A	■	E
R	E	T	R	E	A	T	S	■	S	M	I	L	E	R
A	■	I	■	N	■	H	■	■	■	B	■	T	■	E
T	E	S	T	A	T	O	R	■	C	A	R	E	E	N
E	■	H	■	D	■	G	■	C	■	N	■	R	■	I
■	■	■	■	■	G	R	O	U	N	D	R	E	N	T
C	■	S	■	E	■	A	■	S	■	S	■	D	■	Y
A	N	T	I	C	I	P	A	T	E	■	■	■	■	■
S	■	A	■	S	■	H	■	A	■	S	■	D	■	B
H	E	L	O	T	S	■	F	R	O	N	T	I	E	R
M	■	W	■	A	■	■	■	D	■	I	■	S	■	A
E	X	A	L	T	S	■	S	P	E	C	I	M	E	N
R	■	R	■	I	■	■	■	I	■	K	■	A	■	D
E	N	T	I	C	E	■	W	E	A	S	E	L	L	Y

THIS month's £10 prize goes to Dave Morley, a programmer/analyst with the North-east Electricity Board in Newcastle-upon-Tyne. Prizes of £5 each go to Francis O'Brien, a lecturer with the National Computing Centre in London, and to Ian Nicol, who is senior programmer with the CEGB Computing Centre in London.

Planning and Transportation

Technical Programmer

£6873-£8325 p.a.

The Computer Services Group of the Department has terminals to an ICL 2980 running under DME and to an ICL 2976 under VME/B, a Graph Plotter, a Digitizer and several Micros. The successful applicant (male or female) will support existing and develop new programmes to assist Engineers in Highway Design, Structural Analysis, Traffic Management and other technical areas. Applicants should have at least two years' programming experience, preferably using FORTRAN and/or BASIC on ICL Main Frames and/or Micros. Some experience in a highly technical environment, preferably using H.C.D. and Moss Programs is desirable.

This is a permanent post based at Trent Bridge House, West Bridgford, and assistance with re-location may be given in appropriate cases.

If you wish to discuss the post informally, please telephone Ken Taylor on Nottingham 824824 ext. 219 or John Henney on Nottingham 824824 ext. 307.

Application forms and further details are available from the Director of Planning and Transportation, Staffing Section, Trent Bridge House, Fox Road, West Bridgford, Nottingham NG2 6BJ. Tel: Nottingham (0602) 824824 ext. 388. Please quote ref: DN98. Closing date for applications 11 April 1983. (3085)

Nottinghamshire County Council
County Hall, West Bridgford
Nottingham NG2 7QP (1843)

Carreras Rothmans

Project Managers and Systems Analysts

up to £13,500 **Aylesbury**

Carreras Rothmans are Britain's largest exporter of cigarettes and have an increasing share of the home market.

We are now completing the transfer of our Information Services Department to Aylesbury and have recently installed IBM 4331 computers at a number of Company locations. This has created opportunities for experienced Project Managers and Systems Analysts.

As a member of a small team operating in a multi-project environment you will be responsible for developing and implementing a wide range of business systems, liaising with user departments which include Finance, Marketing, Manufacturing and Distribution.

Ideally you should be an Analyst with at least 4 years' industrial or commercial experience designing and implementing both batch and on-line systems and be able to communicate effectively with both technical staff and users alike.

Benefits include a generous starting salary, membership of BUPA and a contributory Pension Fund. Relocation assistance will be given where appropriate.

Please write or telephone for an application form to: Mrs P.J. Lilley, Personnel Officer, Carreras Rothmans Limited, Oxford Road, Aylesbury, Bucks HP21 8SZ. Tel: Aylesbury (0296) 26111, ext. 3504. (3069)

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Dynatech Microsoftware Ltd., has a range of easy-to-demonstrate-and-use English language programming systems for: IBM PC, Commodore machines (inc. 64), Apple II, Sirius1/Victor 9000, available now, or in the very near future, and wishes to complete its appointment of local area distributors covering the UK. Excellent commission/discounts, training, support provided.

Write for full details to; John Marjoribanks, Dynatech Microsoftware Ltd., Summerfield House, Vale, Guernsey, Channel Islands.

LIVERPOOL INSTITUTE OF HIGHER EDUCATION
(Christ's and Notre Dame College and S. Katharine's College)

LECTURER IN COMPUTER STUDIES

Applications are invited for the position of Lecturer in Computer Studies to teach courses within B.A. (Gen.) with Honours and B.Ed (Hons.) modular degrees. The person appointed will be required to teach at all levels of the subject, including In-Service courses for teachers. Topics covered include Programming Language Structures, Computer Architecture, Information Systems and Design, Software Design and Developments, and Digital Electronics.

Applicants should have a degree in a subject containing Computing as a major component and/or recent industrial or commercial experience. Salary on Lecturer II/Senior Lecturer Burnham Scale £6,855-£12,816.

Further details about the post are available from the Rector, Liverpool Institute of Higher Education, Stand Park Road, Liverpool L16 9JD, to whom letter of application should be submitted by 18th April, 1983. (3030)

UNIVERSITY OF NOTTINGHAM
Cripps Computing Centre

SYSTEMS PROGRAMMER

Applications are invited for the post of Systems Programmer in the Systems Section.

The Centre operates ICL 2977 and 2976 under VME/B, a VAX 11/780 and several PDP-11 systems. Both wide and local area network development work is in progress, providing links to the University of Manchester National Computing Centre, the Midlands Universities network and PSS. A GEC Campus Packet Switching Exchange is also shortly to be installed.

The Systems Section is responsible for VME/B systems software, and the development of general operating systems software, including user commands interfacing to VME/B, a File Archiving System and News/Mail facilities. It is also responsible for the installation and development of a Unix based system on a PDP-11 and for an ICL PERQ.

The successful candidate will be developing systems software for one or more of the above mentioned systems, and a good knowledge of VME/B or VME 2900 and some Unix experience would be an advantage.

Applicants should normally have a good honours degree or equivalent experience.

Starting salary will be in the range £6,375-£7,655 (A) or £6,655-£9,370 (B). According to level of experience.

Further particulars and information forms, returnable not later than 30 April 1983, may be obtained from the Staff Appointments Officer, University of Nottingham, University Park, Nottingham NG7 2RD. Ref No. 860. (3032)

BOX NUMBERS

Box number replies should be addressed to.

Box Number ....

c/o Computer Weekly
Quadrant House
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In the first instance please contact Maureen Parker on: Waltham Cross 33208. (3107)

PUZZLE ANSWER

The cyclic set is 39119.